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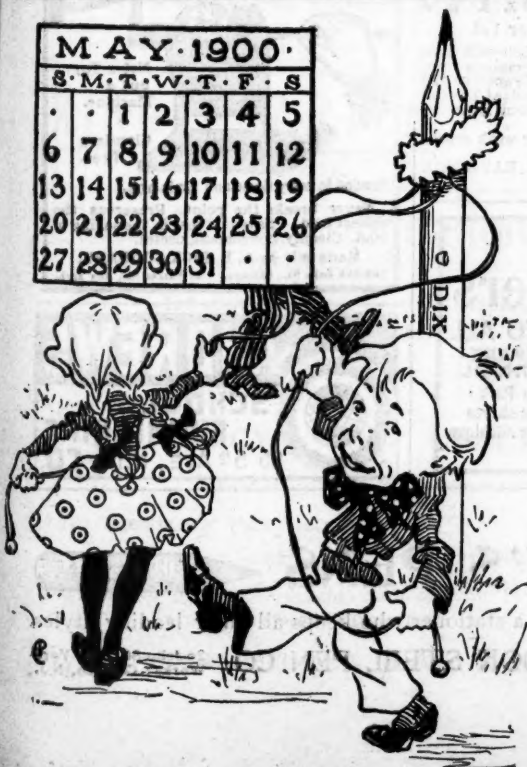
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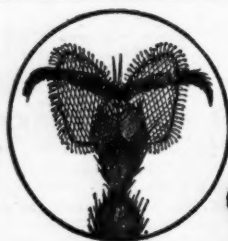
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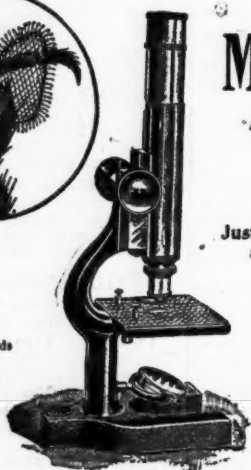
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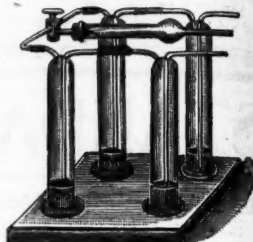
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Fatigue Studies:

A Discussion at the Teachers' Club.

By ROBERT BURNS, CLINTON, N. Y.

"He never loses a moment," was once considered an unqualified compliment when applied to a student or a worker," suggested the principal to his associates of the Teachers' Club. "But nowadays we are not quite so sure that it says much for the wisdom of the one to whom it is applied. On the other hand, from many different sources comes the testimony that too much activity is loss instead of gain, since over-fatigue poisons the human system and is dangerous alike to body and mind. An analysis has been made of the secretions engendered by fatigue, and they have been found to be very similar to the ancient vegetable poison, curari, an extract of the *strychnos toxifera*, into which certain tribes of North American Indians were accustomed to dip their war arrows. The poison of fatigue is of the same general chemical nature, and is deadly if created in the human system more rapidly than the blood can carry it off. There is no known antidote for this poison, and its subtle dangers beset alike the indolent pleasure-seeker and the worker.

"An Italian specialist once examined fifty school children who were about to take part in a written examination of two and one-half hours. Before entering upon the strain which such an examination must necessarily be each child was instructed to lift as much as he could, the results being measured by the dynamometer. This was done to test the strength of each pupil before the examination. After the work was completed, the children were again instructed to lift as much as possible in the same way. But it was found that, with one or two exceptions, they could not lift as much by several pounds, as they had lifted before. It is now a well-demonstrated fact that prolonged mental strain, it matters not of what kind, will diminish the pulse, produce dullness and heaviness of the head, and bring about other disastrous results, such as palpitation of the heart, shortness of breath, and insomnia."

The Measurement of Fatigue.

"How to accurately measure fatigue, and determine with approximate exactness the extent to which human nerves and muscles may be weakened by use or abuse, is the discovery which has been made by Dr. Wedensky, a Russian scientist, and professor in the University of St. Petersburg," replied the teacher of the sciences. "His attention was first drawn to this line of research while he was studying the effects produced upon the nerves of motion by curari, to which our principal has already referred. Tho it has been known to science since the sixteenth century, its mysterious action upon the nerves had never been satisfactorily explained. It is a brown substance, and unlike most vegetable poisons, it may be taken into the human system, internally, in considerable quantities, without effect, but if introduced thru a rupture of the skin, so as to mix with the blood, it causes paralysis of the motor nerves and produces death.

"Dr. Wedensky also discovered that he could produce effects similar to those of curari by rapidly and powerfully exciting the motor nerves with an electric current, causing the muscles instead of contracting, to relax. As the intensity of the nervous excitement diminished, however, the muscles contracted and became normal once

more, which explains the exhaustion which follows frequent or sustained exertions involving a continuous physical or nervous strain.

"The following method of measuring fatigue in muscles thereupon suggested itself to the Russian scientist, as the result of these and other experiments: The subject takes in his right hand, for instance, the negative electrode of a battery, while the positive is applied to the right foot. A current of sufficient force to cause a sense of contraction to be barely perceptible in the muscles traversed is then turned on. A needle connected with the apparatus at the same time traces on a waxed cylinder the record of every movement or contraction of the muscle which is being studied, and thru which the current is passing. This is done to establish a standard measurement. The positions of the electrodes are then reversed, the negative being placed below and the positive above, and the current is sent downward thru the muscles. If the intensity of the upward current causing the slightest perceptible muscular contraction, is feebler than the first of the descending currents, it shows that the muscles are enervated, the extent of their weakness being determined by the difference between the intensities of the two currents, aided by the record traced by the needle upon the cylinder."

The Physiology of Weariness.

"This brings to mind the fact that Prof. Michael Foster a year or two ago delivered a lecture on the subject of 'Weariness,' before the University of Cambridge, England," interposed the librarian. "Commencing with the simple muscular act, he analyzed the physiological phenomena of weariness both in the physical and in the higher work of the mental operations. He clearly emphasized the two prime factors in the production of exhaustion—too rapid expenditure of capital or force, and the accumulation of the products of overactivity in the working organs.

"After proving that the nervous system was a candle which could not be profitably burned at both ends at once, Professor Foster went on to show that endurance depended largely upon the purity of the blood, and the readiness with which these waste products were eliminated was proportionate to the staying powers of the individual. 'The hunted hare,' said he, 'died, not because he was choked for want of breath, and not because his heart stood still after its store of energy had given out, but because a poisoned blood poisoned his brain, and thru it his whole body.' It was also shown that the humbler helpmates of the active organism—that is, the nutritive, excretory, and metabolic functions of the body—were of the highest importance to the enduring activity of the higher executive mechanism. Professor Foster touched upon, but did not treat, the subject of inertia, or more commonly, 'laziness,' and I trust that he will on some future occasion afford us the benefit of his views upon this phase of pseudo-fatigue."

The Fatigue of Over-Athleticism.

"Sometimes, owing to faults in the training, or to exercises unsuited to the individual, or to injurious efforts to excel, certain parts of the body are irregularly developed," ventured the instructor in physical culture. "We are aware of this irregular development for the reason that it may eventually become visible to the naked eye. In the opera-dancer, there may be undue development of the muscles of the leg; in the rowing man, the undue

development of the muscles of the arm, and in the cyclist there may be the same condition of the lower limbs when the exercise is carried to an extreme. In some instances, also, from excessive exertion, the heart itself may become enlarged, irregular in action, at first much too powerful, and in the end too feeble. These are serious disadvantages, which creep gradually on, and are often not detected until it is too late for them to be remedied.

"There is another disadvantage which is more direct in its nature, that is, a dangerous degree of muscular fatigue followed by feverish conditions, and again by undue exhaustion—precisely as if the person so afflicted had passed thru a wearying fever, in so much that physicians often speak of this condition as 'fatigue fever.' But we have learned a great deal on this subject within the past few years. We have come to understand that unless the muscles have been brought into fair condition, not an over-trained condition, they are very susceptible to a change in structure, which is, in extremes, actually dangerous, commonly recognized as rigidity or 'stiffness' of muscle. The unconditioned muscle, in wearing itself out under exercise of a rigorous kind, becomes incapable of natural development; it becomes painful, and produces in itself poisonous products, which must be eliminated from the body, and which if they remain, cause fever and ultimate depression.

"We sometimes see this disease attended with fatal results in the lower animals, as in the horse that has been badly over-ridden, or the smaller game that has been too severely chased. We also see this condition in the human subject in the case of athletes who have trained too intently, and sometimes in the case of older people who take up vigorously some severe recreation, like mountain climbing, with the idea that they are going to renew their health and strength by so doing. We find it in another form in those who are fairly well trained, when they are endeavoring to make their muscles what is commonly called 'hard as iron' as they boast, a condition which it is quite a mistake to consider beneficial, and which has led to the saying by trainers: 'Over-train, over-strain,'—an excellent, tho generally unheeded, warning.

Chronic Fatigue Ruins Health.

"An understanding of the laws governing overwork, and the penalties of over-exertion should be of the utmost value to every student and worker," concluded the vice-principal. "When a man is tired he has, either by inactivity or over-activity, committed a chemical, physiological, and psychological violation of the laws of the human economy, and is then in no condition to withstand the wear and tear of life. Fatigue is the result of labor, and as such is a periodic symptom with which every healthy person should be familiar. It is one of the laws of organic life that periods of relaxation shall succeed periods of activity. The heart itself is normally in repose for about one-third of the time consumed by each beat—a fact in which there is something peculiarly suggestive, since it is generally agreed that about one-third of the twenty-four hours should be devoted to sleep. Life itself is made up of a series of vibrations, in which tension and rest succeed each other. The heart vibrates about seventy times per minute; the vibrations of the respiratory organs occur about sixteen times within the same period; while the vibrations of the whole organism may be said to complete their cycle once in the twenty-four hours.

"An abnormal fatigue, a state approaching exhaustion, occurs when one attempts to alter nature's rhythm, when the hours of tension are made to encroach upon those which should be devoted to rest, when brain, and muscle, and nerve are driven to the furthest exertion. Fatigue of the kind known as over-training results, in the case of the athlete, in heart weakness and shortness of breath; while the long-continued fatigue occasioned by excessive application to study, or to business or professional pursuits, results often in nervous prostration, and not infrequently lays the foundation for paralysis."

Written Language Work. I.*

By ROBERT C. METCALF, Supervisor of Schools, Boston, Mass.

As long as the language work is oral, neither teacher nor pupils have any difficulty with penmanship, spelling, capital letters, or punctuation. With written work all these difficulties are encountered. These mechanical difficulties, as they are termed, should be met and at least in part overcome before written composition is made prominent. The "mechanics" of written composition can be most economically taught by means of carefully prepared

Dictation Exercises.

To this preparation the teacher should give the most serious attention. A few exercises prepared for a definite purpose are worth a hundred carelessly taken from some book which happens to lie ready to the hand upon the teacher's desk. A few lines (not more than four or five) may present opportunities for using capitals at the beginning of sentences, in proper names, and in titles. Or it may seem best to a teacher of one of the lower grades to present but one of these difficulties in one exercise. The teacher's judgment should determine the kind of exercise and the degree of difficulty that should be given.

Books of dictation exercises may be purchased, and sometimes they are very helpful, but they should never usurp the teacher's function. He alone should decide upon the needs of his pupils, and should shape the exercises which his pupils are required to study.

It may be well for the teacher to classify his exercises as (1) lessons on the use of capitals, (2) lessons on the use of titles, (3) lessons on the use of commas, (4) lessons on the use of quotation marks, etc. In this way the teacher will be sure of doing definite work, and will be more likely to get good results.

In all written work, including dictation, good penmanship should be demanded. Dictation exercises are not given for the special purpose of teaching penmanship, nor indeed are such exercises given to teach spelling. Still penmanship and spelling are taught, or should be, in every written exercise. All mechanical difficulties connected with the writing of composition should receive attention in dictation work. The proper headings of letters or other written documents, the right way to close a letter, the indentation of the first work of a paragraph, the superscription on the envelope of a letter,—all these are fit subjects to be considered by the teacher when preparing his exercises for the class. He must be sure that the exercises are short. In four or five lines any skilful teacher can introduce as many difficulties as the ordinary pupil should be called upon to meet.

Dictation exercises must be examined after they are written, and a short one is much more easily examined than one that is long. A teacher who spreads his two or three difficulties over half a page of paper is simply wasting time. He will be very likely to conclude that one or two such exercises per week are all that he can afford to give, whereas a dictation exercise should be given every day in all classes below the sixth. Often classes in the seventh grade need as many. Usually, however, if the daily dictation is given thruout the second, third, fourth, and fifth grades, the sixth will require but four per week, and a smaller number in the higher grades may be sufficient.

If the written composition in the higher grades shows a weakness in the "mechanics," this weakness betokens a need of more dictation. The correction of errors in spelling, punctuation, capitals, etc., in written composition is too expensive. It can be done more economically in the dictation lesson.

Such exercises as we have been considering are teaching exercises, and not mere tests. They are written upon the blackboard by the teacher and studied by the pupils. In the lower grades they should be studied by

*This is a continuation of the series by Mr. Metcalf on "Supplementary Reading." The preceding articles were published in the numbers for Feb. 3, 10, 17, March 17, and April 14.

the pupils and teacher together. Attention should be called to the points of special difficulty, and enough discussion be allowed to insure an impression upon the minds of the children.

When the time comes for testing the work, let the exercise on the board be covered by a curtain, and then dictated by the teacher while it is written by the pupils. The words will be given slowly and distinctly by the teacher, and given but once. Pupils should be required to hear the first time the words are spoken. Teachers who, in a dictation exercise, repeat words and phrases two or three times to accommodate heedless pupils, will soon have a class of poor listeners on all occasions, and scores of precious minutes will thus be wasted.

When the exercise has been dictated and written, let the curtain be removed and each pupil allowed to compare his work with that upon the board. The teacher standing at the board calls attention to the real difficulties, and cautions the children to look carefully to find any mistake that may have been made. Papers may be exchanged and examined provided no penalties are inflicted for mistakes. A class of pupils under good training will work to the end that their exercises shall be free from errors. No lower motive should be admitted for a moment. When the examination has been made, let the general result be known by a show of hands: first, those having correct papers, then those having one error, two, three, etc. Finally, ask how many think they could write the same exercise without making any mistake. Ask them to turn the papers over, dictate the same lesson a second time, remove the curtain, and let the children see whether they have succeeded in writing a paper free from mistakes.

(To be continued.)

A Story of the Five and Forty.

By OLIVER DEE ARNOLD, California.

It was an average fifth grade of five and forty boys and girls. If the teacher was above the average in any particular it was in her love for bad boys, and in her intensity of sympathy in all her pupils' interests. Precious to her was that buoyant spirit of good comradeship existing between herself and her pupils. Nothing of hers was too good to be shared with these young people, and in return she received their best.

And so it was that when one morning Miss Blake looked into their ever-inquiring eyes, she said, "Do you not see something mysterious in my face? Can you make it out?" Numerous wild guesses were made, but all agreed that something delightful indeed lurked there.

"Two weeks from to-day," explained Miss B., "instead of your regular rhetorical exercises we shall try something entirely new. The pleasure and success of the trial depend upon yourselves, so in making your choice from what I place before you be sure to decide upon whatever is most after your own taste and liking. Each boy and girl will employ his spare time outside of school hours in making something to bring to school on the day mentioned. Let it be useful or ornamental, or both; but let it be entirely of his own making. While you are thus preparing your contribution, inform yourself—by reading, inquiry of teacher, parents, or other friends, or investigation in any way—concerning the materials used, the manufacture, etc.

A few seemed to grasp the idea instantly, and showed by thoughtful countenances that they were already on the way to a decision. Some looked first bewildered, then discouraged, and finally ended with an unmistakable expression of displeasure or disgust. Others curled up into interrogation points and grew almost unmanageable in their desire to have absurd questions answered. The more self-confident were impatient to tell how much they knew. It was a nice case of adjustment of parts to that great and varied whole which constitutes life as we see it every day. Each temperament flew to its own magnet.

Here was the teacher's opportunity to assert her rights as guide and counsellor—a delicate task to be performed with a firm hand. The original, self-reliant ones of the first-mentioned class were well enough let alone. The second class needed enlightenment and suggestions to encourage them in the belief that it was not so hard or unreasonable after all, and that they were equal to the proposition. And the hasty interrogations—"squelch" them? No, satisfy them as far as seemed to be for their good, and quietly lead them to see that each must work out his own salvation. As for the little "Smarty" at the end of the line, do not despise him. It sometimes takes just such an one (with the corners rubbed off) to fill some important niche later.

When the appointed day came, teachers of other grades in the building were beset for permission to go to Miss B's room for a few moments during recess or noon intermission. Vague rumors were in the atmosphere. Curious eyes took sly peeps in passing the door of No. 5. The pupils of that room grew more and more enthusiastic in the consciousness that their efforts were not going unheeded. The articles were carefully and tastefully arranged at the front of the room so as to make an effective display.

At the beginning of the afternoon's session, came the experience meeting. Much sound information was gained from the accounts of the pupils as to "how it was done." A general discussion—conducted in a quiet, orderly manner awakened sincere interest in each article displayed. The announcement by one little maid, who had brought a cake of her own baking, that her cake was to be cut and served to her classmates and teacher caused a stir of approval and satisfaction. This was followed by an offer of some delicious cookies brought by another girl.

Soon it was settled that a certain length of time should be devoted to writing the story, each pupil to tell of his own contribution. The teacher stood at the blackboard ready to write words difficult to spell, as they were called for. As the work progressed, she could discover the helpless ones. She could quietly encourage here, suggest there, and be of assistance in some way to each one. Never were pencils driven more furiously! Never was paper consumed more greedily! Jolly Johnny who had brought the pasteboard jumping-jack that hung upon the wall waiting to be pulled into all sorts of fantastic shapes by means of a string dangling from the back, was as serious in his efforts now as the little lady next him who sat with brow puckered over the manufacture of the bit of linen used in her daintily hem-stitched handkerchief. Someone had challenged John as to his work being either "either useful or ornamental," but John convincingly pointed out its merits as a thing of beauty, and silenced the first objection by telling, confidentially, how it was soon to be sent in a Christmas box to a family of poor children.

An apron had been brought, which called for the story of cotton-raising and manufacture of cotton goods. Several little wagons and carts brought out a fund of information peculiarly interesting to the boys. A kite led to the story of Benjamin Franklin's kite—new to the majority of the children. There was found to be much, after all, in the very things which at first thought seemed entirely barren. The little cake-baker certainly had the worst of it. There were sugar and flour and butter and milk and eggs and flavoring!—enough to puzzle the head of a grown person to know where to begin; but she was too deeply interested to leave it unfinished and begged leave to take her paper home with her.

Finally, at the signal for all to stop, a set of tired, happy faces looked up with a sigh for the yet untold things they knew and a smile for what was coming. The cake and cookies proved entirely satisfactory—unless in point of quantity. The makers thereof were the heroines of the hour. All were delighted because all had done their best.

Hiawatha in the Primary School.

By ANNA EGGLESTON-FRIEDMAN.

The matter of finding the right kind of literature for the elementary grades is of considerable importance. A large number of teachers are quite content to continue using what Mary E. Burt styles "cat and dog literature" because it requires no preparation on their part. But a new and greater life comes into the school-room as soon as the teacher begins to study subject-matter and children in order to find the adaptability of the one to the other. Better by far that she make some mistakes in her choice of subjects and her manner of dealing with them than that she, with entire satisfaction, draw from a stagnant pool and give to children whose thirst demands a living fountain.

An examination of the course of study in many cities shows that Indian legends are frequently commended for pupils of the first and second school years. Sometimes they are classed in the outline for language, but oftener in that for history and literature. In a late report of the Minneapolis schools Supt. Charles M. Jordan gives as aims for teaching literature and history:

"Sympathy with human life. This implies a development of the imagination as a necessary factor in the realization of brotherhood. It means a coming out from the self-centered life of a child into a broader world, of which he is beginning to feel himself a part.

"Sympathy with the struggles of man as the pupil is brought face to face with the life of the past, and gradually learns thru what victories we have inherited the present.

"Cultivation of taste for good literature.

"An added appreciation and love of the beautiful in nature.

"An added love and appreciation of the beautiful, the noble, and the heroic in character.

"An ideal of service as an essential of growth.

"Desires awakened to reach up toward these higher ideals.

"Character-growth."

The course of study for the Minneapolis schools places selections from "Hiawatha" for pupils of the second grade. In both the Denver and San Francisco schools the poem, or a portion of it, is given to the children of the first year in school, while in Chicago "Hiawatha" is one of the topics placed on the list for the third grade.

I take pleasure in presenting to the readers of THE JOURNAL the following account from successful school-room experience, illustrating how Hiawatha was used with a class of children in Buffalo, New York. The writer is Miss Ida Louise Kempke, teacher of history in

life in the early, primitive days of Longfellow's poem, to mark out the directions in which we hoped to arouse in the children a wholesome curiosity and an inquiry into a fuller understanding of their own lives and their places in the world:

I. HOME.

1. Characters.

a. Hiawatha, Nokomis, Iago.

b. Their physical characteristics.

2. Wigwam and surroundings.

a. Material.

b. Model and structure.

3. Cradle.

a. Material.

b. Model.

c. Lullaby.

II. CLOTHING.

1. Skins.

a. How procured.

b. " prepared.

c. " put together.

d. " decorated.

2. Garments.

Deerskin shirt, cloak, moccasins, leggings, etc.

III. FOOD.

1. Kinds.

2. How obtained.

3. How prepared.

4. Utensils.

IV. INDUSTRIAL LIFE.

1. Canoe Building.

a. Materials.

Bark of birch tree.

Branches of cedar.

Roots of larch.

Resin of pine balsam.

Quills of hedge hog.

Paint from roots and berries.

b. Model of boat.

2. Hunting and Fishing.

a. Weapons,

1. Bow and arrow.

2. War club.

3. Nets for fishing.

3. Agriculture.

a. Implements.

V. SOCIAL RELATIONS.

1. Friends of his boyhood.

Chibiabos, Kwasind.

2. Games.

3. Hiawatha, the helper and teacher of his people.

4. Minnehaha, the companion of his manhood.

a. Wooing.

b. Wedding feast.

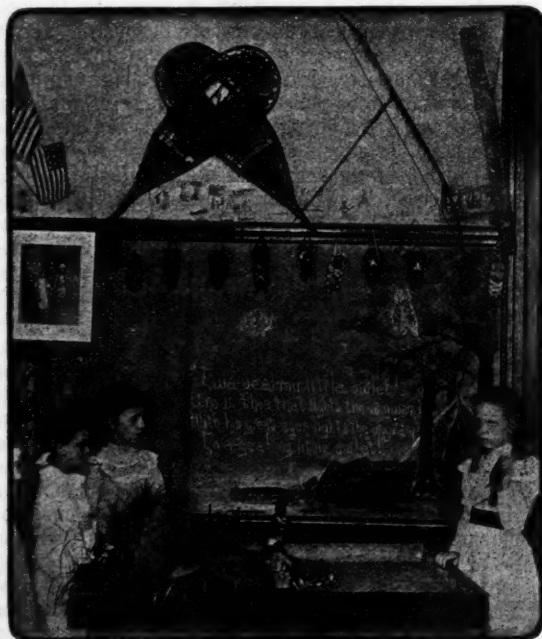
It was felt that this outline, tho not ideal, was reasonably safe and sufficiently elastic to yield to our needs from time to time. True to the principle of the old fairy tales, according to which "they lived together happily forever after," it was thought best to conclude the story with a final note of joy to our hero in his marriage with Minnehaha.

Plan of Work.

Our method of procedure was to take a canto, or a portion of one, according to the nature of its material, and narrate it in story form. Whenever it was possible for children to draw inferences from the conditions presented, such a course was followed. In order to have the children enter fully into the spirit of the poem, to build up vivid mental pictures, it is necessary to elaborate with sufficient details. The reading of the canto from the original supplemented the story after it had been fully presented. The work was largely in the hands of the young women who are in training, supervised by the head critic and the regular teacher. To the latter's strong personality is due a large measure of the success that was attained. Frequent comparisons between the present and the past proved a valuable factor. Our purpose will be defeated to a large extent, if children are not directed to gaze down the vista of the past and led to feel conscious of progress.

An Indian Atmosphere.

One of our first efforts was to create an Indian atmosphere in the room with the aid of pictures and black-board drawings. The Buffalo Society of Natural Science lent us a large collection of Indian relics containing many specimens of clothing, weapons, tools, games, wampum, an Indian cradle, and various other articles that put us in close touch and sympathy with Hiawatha and his people. We used our sand table to represent, as far as was practicable, the wigwam of old Nokomis on the shore of Gitchee Gumee. Two Indian dolls dressed respectively as Hiawatha and Nokomis added life to the scene.



the Buffalo Training school. The accompanying photograph shows Miss Kempke's class at work at the sand table.

Lessons in Indian History from Life.

By IDA LOUISE KEMPKE, New York.

In studying Hiawatha the following outline served to keep before us the fundamental lines of activity of Indian

Our young hero aimed with his bow and arrow, was ever ready to jump into the waiting canoe at the command of his grandmother in search of food or skins, whatever the occasion demanded. Much stress was laid upon his prompt obedience.

In the spring the children assisted old Nokomis in planting the corn in her garden, while they watched over the seedlings with as much devotion as the most zealous lover of the soil. It was an interesting spectacle to watch the children gather around the sand table on coming into the room before the session began. Their faces were a true index to the intense delight that the story was affording them. Occasionally a too devoted admirer, thrusting his familiarity too far, misplaced the pine twigs and thus seriously damaged the forest that rose dark behind the wigwam. The culprit was instantly frowned out of the group by his comrades, and compelled to transfer his interest temporarily to another line.

The many opportunities for some form of manual expression proved a most valuable adjunct. Clay modeling, paper cutting, sewing, illustrating with pictures, gave ample variety. The children found great pleasure in making cradles similar to the one in which the baby Hiawatha was rocked. Our fifth grade boys in one of their sloyd exercises prepared the frames. These were covered by the little ones with discarded kid gloves. Many of the cradles were prettily decorated with beads and proved rather artistic. There was no distinction as to sex apparent in the sewing bees, the boys came to school fully equipped with sewing outfit and plied their needles as vigorously as the girls.

The rapidity and ease with which a picture could be constructed made the illustration of the story on the

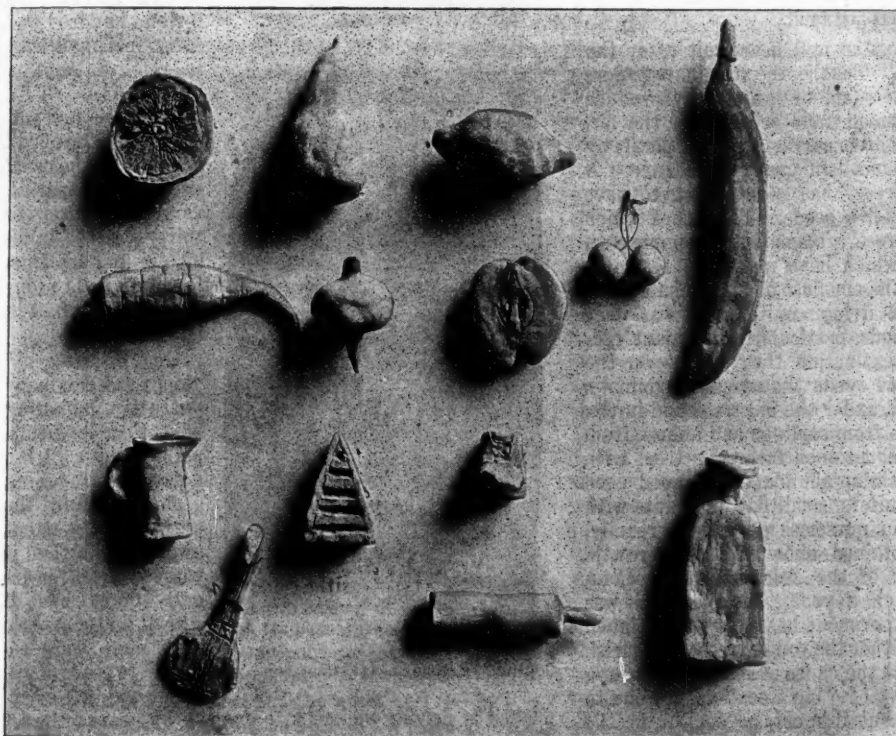
Where did the wigwam stand? What rose behind it? After corrections and recopying, these exercises were entered into note-books, together with the results of the paper cutting and the pictures that had been made. On the day following the story of the "Picture Writing," the children drew some of the pictures on sheets of birch bark, which had been kindly donated by an interested friend. Miss Holbrook's "Hiawatha Primer," with its artistic illustrations, served as a delightful companion to our regular readers during the time that we were interested in the poem.

Some Encouraging Results.

Two lessons each week from February to June were given and the question arises—have the benefits to the children been commensurate with the time and labor expended on the work? If we can interpret the lighting up of the eyes, the glow of the little faces manifesting the depths to which the subtle charm of the poem had moved them, the frequent and earnest appeals to hear its reading, then we may certainly claim a fair measure of success. The pupils have followed the experiences of a people engaged in the struggle of adapting the natural products of the world to its own use; they have felt the thrill of the beauty that was interwoven with the hardships of the rude life. There is also strong evidence that the beginnings of a taste for good reading has been awakened. What seemed to us noteworthy was the eagerness of the children to own the book. They frequently inquired its price, some of them hoping to earn the money with which to buy it. One little girl of the poorer section of our district was in the habit of telling the story to her brothers and sisters before bedtime. The mother was obliged to promise to buy the book,

which, no doubt, she has long since done. The most gratifying testimony remains to be told. Last September the children advanced to the third grade, and, except for a brief period in the fall, during which we "made connections," other work has been in progress. Great was our surprise after the holidays to learn that nine of the children had received the poem at Christmas, some copies of which were the regular school edition, while others were in a complete collection of Longfellow's poems.

In conclusion, let me encourage those teachers who still hesitate to present "Hiawatha" to children on the plea that their immaturity would warrant only a superficial grasp. The experience of the large number of teachers who have successfully carried on this work ought



Examples of Clay Modeling.—Second Year (see description on page 557.)

blackboard a favorite exercise. Long sweeping strokes with the sides of the crayon made the sketches very effective.

The results of our experience along this line have convinced me that our work would be greatly strengthened if we allowed children more opportunities to give completeness to their ideas thru some manual exercise.

Each lesson was followed by a written language exercise, consisting of two or three questions covering the narrative, as for instance, In what did Hiawatha live?

to be sufficient evidence that young children are able not only to understand, but to find much pleasure in the poem. It has been said that the one crowning qualification of a perfect teacher is sympathy, sympathy with young children, with their wants and their ways. This, coupled with enthusiasm which is born of the spirit, will remove all barriers. Possessed with this sympathy and enthusiasm teachers have but to master the poem, and then the way of presenting it to children will become plain to them.

Study of Giant Trees.*

By LA ROY F. GRIFFIN, Boston.

Special conditions which serve to prolong the life of some tree may make an individual of any species grow to a giant size. Two such trees, oaks, grow in England, of unknown age, but if the records can be trusted they certainly are a thousand years old or more. Here and there a giant maple can be found, usually a sugar maple, tho probably no maple has lived more than five hundred years. Giant pines have occasionally survived in the virgin forests. But all these are exceptions.

History, as preserved for us in the rocks, shows a period when giant forests flourished everywhere. Some of the trees then common, but whose species are now extinct, grew with remarkable rapidity. The conditions of the earth and the air favored rapid growth, as they do not now. Growth is slower because the supply of carbon is less, and trees must have carbon or they cannot grow. Under these conditions, a period of life no longer than belongs to modern trees would develop a giant. Besides this, certain species of trees, like the olive and the cedar of the East, appear to have no fixed limit of life, but they continue to flourish with no marks of old age.

A few of the giant species have adapted themselves to the changed conditions so that they have survived to the present. But they are now confined to certain rather limited areas. One of the most important of these sections is the Pacific coast region of the United States, and three species of cone bearers (*Coniferae*) still grow there. They are the Monterey cypress (*Cupressus macrocarpa*) and the two sequoias or redwoods (*Sequoia sempervirens* and *Sequoia gigantea*). Each of these has features of special interest.

Flowers and Fruit.

These three species blossom and bear fruit after the usual pattern of conifers. That is, the staminate flowers are borne upon loose tassels (aments), and they produce an abundance of pollen which falls freely into the air, when the anthers ripen, and is carried to the pistils by the wind. Seeds are produced in great abundance. A single cone of the "big trees" has been known to have one hundred and seventy-five seeds. The cones which make the fruit of these trees are small and compressed, that of the "big trees," which have made the Mariposa valley so famous, being the smallest of all, probably the smallest fruit of all the living conifers. It was once thought that the redwoods, particularly the giant redwood, were doomed to extinction thru failure on the part of the tree to produce seeds that would germinate. It is true that the ground under the old trees and in the vicinity is practically free from saplings and almost from seedlings as well. But cones shot from the trees with a rifle are found to contain an abundance of good seed of the usual form of conifers, small flattened nuts with wings. These planted in nurseries germinate readily, and the seedlings so obtained show vigorous growth. Mr. Adams, the founder of the Adams Express Company, is said to have such a young sequoia which was started in 1853. The experiment has not yet continued long enough to show whether the young trees will flourish or not; but it proves that the cause of the lack of young growing trees in the grove of "big trees" is not due to the quality of the seeds, but it must be sought in the soil itself, or in the ravages of some animals.

It is a fact of interest that young redwoods, seedlings, and saplings, have a very different appearance from the mature trees. They are more conical in form, and the branches reach nearly to the base. The leaves, too, are longer and much slimmer, so showing their near relation to the pine.

Big Trees of the Pacific Coast.

The Monterey cypress (*Cupressus macrocarpa*) has the

widest range of these giant species, tho it does not form large and dense forests like the common redwood. It extends along the coast all the way from northern Oregon to southern California, but it grows as rather scattered trees, or in patches. It frequently reaches twelve or fifteen feet in diameter, and its usual height is one hundred feet and upwards. It is a rather rapid grower, so that the belief is general that few of these trees are much over two hundred years old.

The most important of these California trees is the common redwood (*Sequoia sempervirens*). It occupies the coast from Oregon to San Luis Obispo. Its leaves are compressed needles somewhat scale-like in shape, and the branches and foliage are limited to the vicinity of the top. It is truly a giant tree, for in the old forests its diameter ranges from eight feet to twelve, and its height from two to three hundred feet. These giants have lost none of their vitality, tho they must have already attained a great age; for when they are cut they are usually sound at the butt. The fiber of the wood is close set, tho the wood is about as soft as white pine.

The most famous giants are the "big trees" of the Mariposa valley, technically known as the giant redwoods (*Sequoia gigantea*). They stand in groups, and as single trees scattered along the valley, the scanty survivors of a race almost extinct. They are so large that

to form any clear idea of their size is difficult. One fallen monster, hollow for a long distance from the ground, permits a horseman to ride in and go forward for one hundred and forty feet and then to ride out of a knot hole. The trees which are now supposed to be of full growth and the usual size of the species, vary from thirty to thirty-six feet in diameter and are from four hundred to four hundred fifty feet in height.

One of these old giants was cut, many years ago, by boring holes thru it with a pump augur, the holes just touching each other, until the entire wood was cut away. Even then it refused to fall, so exactly erect had it grown, and some two days more were required to get it down.

This was accomplished by driving wedges into one side by means of heavy logs used as battering rams, until it toppled over. A house has been built on the stump. A section twenty feet in diameter has been sawed off and exhibited in many places.

These "big trees" are survivors from a past era. There is no way of determining their age. All the older trees are hollow, the central wood having decayed out to a great height. They have branches only near the top, and the foliage is scanty, so making the tree appear much like a tall shaft.

The wood of these "big trees" is coarse and rather weak. Even if it were not right and wise to preserve the few still growing as monuments of the past, little



A Specimen of the Sequoia.
From "Plant Structures," by Dr. John M. Coulter.—Courtesy of D. Appleton & Co.

*This is a continuation of Professor Griffin's series on the study of trees. The articles already published may be found in the numbers for Aug. 19, Sept. 23, Nov. 11, Dec. 9, Feb. 10, and April 14.

use could be made of the wood as timber. The bark is thick and hard, tho somewhat fibrous, varying from twelve to fifteen inches in thickness, and probably one reason why these trees have survived is its protection.

Uses as Timber.

The common redwood alone possesses value for timber. This is so valuable as to threaten its early extinction as a forest tree. The lumber is cut and sawed into lengths for logs in the usual way, and the wood is adapted to all uses in the construction of frame buildings. The trees are so large that the logs are usually split with wedges into quarters, and then these are sawed into lumber for inside finishing in the manner known as "quarter sawing," which makes the edge of the grain show in every board. The color is a deep red, much like cherry, only not quite so dark, and the wood works easily and smoothly, so making fine finishings.

The redwood would last indefinitely if proper care was taken in cutting. The lumbermen run trains into the forests and the logs are taken out on cars. To free themselves from the annoyance of the valueless tops, these are burned as soon as the logs are taken out. This destroys all the trees too small for cutting and all the seedlings, with the result that the forests are rarely replaced.



Stamp Collecting

As an Aid to the Teaching of Geography.

By CHARLES HORNER.

"It is not what the teacher does but what the child does that educates." This is an educational aphorism well worth remembering. The best teacher is powerless to educate a child without first securing his willing co-operation. For this reason we are always striving to awaken interest, to excite the curiosity, and to dish up dry facts in an inviting manner. Geography, which, treated properly, is one of the most interesting subjects in the school curriculum, is too often taught in a dry, uninteresting, and distasteful way. I have found that the collecting of postage stamps can be made a valuable aid in the teaching of this subject.

The stamps cannot, of course, be kept loosely in envelopes, and so the first task is to marshal the countries of the globe in some systematic manner in the pages of an album. The best plan is to make five divisions corresponding to the five continents. These divisions are then sub-divided according to the number of stamp-issuing countries in each continent.

Obviously, this will necessitate frequent consultation with the map of the globe, and result in giving the class a general idea of the relative positions of the five great land masses, their configuration, the countries into which they are sub-divided, the comparative sizes of those countries, together with much other information which will be found useful in later life. This knowledge, too, is being constantly recapitulated, for every new stamp added to the collection has to be identified and entered according to the country and continent to which it belongs. Here, say, is a Bhopal stamp. Reference is made to the geographical reader and the atlas, and the fact is driven home that Bhopal is a native state of Central India.

Interest is awakened, and many an otherwise dry fact is eagerly listened to and remembered. Or a Venezuelan stamp may find its way into the collection, and the fact that Venezuela is a republic of South America is better remembered because that information is desired and eagerly sought for. So that merely in the classification of postage stamps a vast fund of knowledge of the republics and monarchies of the world is acquired.

The pupils will notice that the stamps of Mauritius, Tasmania, Hong Kong, Jamaica, Cyprus, Ceylon, Natal, St. Helena, Straits Settlements, and many others, all bear the head of Queen Victoria. The stamps of Surinam, Curacao, and the Dutch Indies, present the head of the king of Holland, those of Annam and Tonquin, and

Guadeloupe are similar to the French stamps, those of Madeira have the head of the king of Portugal, etc. These will give the children a better idea of European possessions in various parts of the globe than the usual devices.

One of the prettiest stamps in the album is perhaps a United States postage stamp showing "Columbus in sight of land." In the upper corners are the dates—1492 and 1892. Which, think you, is educationally better, to submit such a stamp to the inspection of a class, or to stand up and say, "America was discovered in 1492 by Columbus"? Then there are other specimens showing "Columbus welcomed at Barcelona," "the flag ship of Columbus," portraits of Columbus and Isabella, and miniature illustrations of other events connected with the life of the great sailor, and the discovery of the new world. Here, too, is an Egyptian stamp with a beautifully clear representation of one of the pyramids and the sphinx.

As I write I have before me several stamps on which the postmark is plainly visible—an Egyptian stamp postmarked "Cairo," a Norwegian stamp on which "Christiania" is very clearly seen, a Dutch stamp marked "Haarlem." How much more interesting a lesson becomes when we know that the little piece of paper pinned on the blackboard has traveled thru the streets of Cairo, past beautiful mosques, bazars bright with many colors, and amidst the babel of many tongues; or maybe it is one which has traveled thru Holland, the land of canals, dykes, dunes, and windmills.

Postage stamps are necessarily arranged in the order of their value. This is of course not difficult in the case of the United States. But to arrange in order those of a foreign country, the collector must have some knowledge of foreign coinage. Thus it comes about that the youthful philatelist can change your centimes, kreuzers, annas, kopecks, pfennigs, reis, centavos, etc., into dollars and cents.

Many of the postage stamps tell also of bloody wars, of revolutions, and the overthrow of monarchies. Turning to the page of Spanish stamps, for example, let us select five consecutive issues. The first bears the head of Queen Isabella II., the second (1870) the head of Liberty, on the third (1872) the head of King Amadeus is substituted, the figure of Liberty appears again on the 1873 issue, while the last bears the head of King Alfonso. The rapid and startling changes chronicled on the faces of those five stamps would lead the average boy to go further afield in his historical studies and learn something of European history. Or, perchance, he wishes to know why Hamburg, Hanover, Lubeck, and Bremen should have issued stamps distinct from Germany. Here an interesting field of medieval history is opened out. He learns that in the middle ages, the Elbe and the North sea were infested by pirates who captured ships containing merchandise going to and from these towns, that an alliance (the Hanseatic League) was formed by these towns for their mutual protection, both from the pirates and the rapacity of kings and nobles, and that in the course of time the league became wealthy and powerful enough to wage war and conclude treaties, much as the East India Company did in later times.

Finally, in addition to the store of knowledge contained between the covers of the postage stamp album, the collection and classification of the stamps is in itself a valuable mental training. In detecting the different styles of perforation, the water marks peculiar to certain countries, the slight differences in color, and the minute—almost imperceptible changes made in successive issues by some countries, such faculties as comparison, judgment, close observation, and so on, are cultivated.

(Adapted from an article in *The Teachers' Aid*.)



Five hundred earnest, energetic young men can earn a neat sum by securing subscriptions for our publications at their County Institutes this summer. Our seven periodicals appeal to every teacher, from the superintendent to the student-teacher. Let us hear from you with full particulars.

The School Journal,

NEW YORK AND CHICAGO.

WEEK ENDING MAY 19, 1900.

The Nine-Lived Evil.

Can it be true that there are still some people in positions of authority in matters concerning the schools, who have the courage to hold on to the antediluvian examinations as a test for promotion? What would be thought of a prosecuting attorney who should ask in sober earnest, "Is it your honor's pleasure that we place the witness on the rack? or shall we begin with the thumb-screws?" And yet in the educational field no one seems surprised at running up against a person wearing the same queued wig that his prototype of two hundred years ago used to be proud of and being asked by a self-contented relic of this kind whether there really are teachers who get along without either raw-hide or ferule. Nothing short of legal measures will ever make these people see that the purpose of the school is other than to coach pupils to pass examinations. Let parents whose children are submitted to the nerve-exhausting strain of that old-time abomination of term examination get together and insist that the school authorities remove the wholly unnecessary evil. If a superintendent is so lacking in humane regard for the physical and mental welfare of children as to let a cruel tradition continue beyond this late day, he ought to be brought to task.

Rochester Secures Thomas M. Balliet.

Dr. Balliet has accepted the offer of the superintendency of the Rochester schools. This is good news. New York needs just such a stimulating power as the coming of this enthusiastic educational leader will mean, to reinforce the small number of men in the state, who are earnestly struggling toward better things for the schools. In the ten years during which Dr. Balliet has been at the head of the Springfield school system his influence has penetrated to every part of Massachusetts, and much good has been accomplished in the rejuvenation of public interest in school matters, in the modernizing of courses of study, in the development of a professional spirit among teachers, in the increase of respect and financial remuneration paid to those engaged in educational work, and in other important lines of progress.

It is said that Acting Supt. George B. Aldrich will succeed Dr. Balliet at Springfield. Some two or three years ago THE SCHOOL JOURNAL spoke of Mr. Aldrich as one of the four most efficient school superintendents in the United States, and it does not hesitate to stand by that statement to-day. He is an all-around educational executive and leader who is sure to keep the Springfield schools on the high plane to which they have been raised under Mr. Balliet's administration.

Important Vacancies in New England.

Several noteworthy changes are under way in the personnel of the New England schools. Aside from the new superintendencies created by the effect of that most beneficent measure recently signed by the governor of Massachusetts which provides for the extension of school supervision to every city and town in the commonwealth,

a number of vacancies exist. Mr. Peterson, the veteran supervisor of Boston schools, has asked to be relieved of his position. Dr. Dutton's successor as superintendent of Brookline will probably be elected some time in June. New Haven is still looking about for the right sort of man to take charge of her schools. The state normal school at Plymouth, the pride of the people of New Hampshire, wants a new principal, so does the high school at Springfield, Mass.

The standard set for each and all of these positions is a high one. Professional equipment and standing and successful experience being *sine qua non* requirements. These last years have been quiet, but, moving times in education. The political superintendent and those who thought the call for special professional study not worth heeding have been left far behind if not out altogether. The best positions are to be secured only by the student of education. The future belongs to the expert.

Endowed Schools Must Economize.

Income from invested funds has been steadily declining for some time and the outlook is that the reduction will continue. This condition has been a cause of considerable anxiety to many schools and colleges. The steady increase of the tax rates in most places adds to the difficulty, since large amounts of funds of endowed schools are invested in real estate, and such property commonly bears the tax burden. Two results of the difficulty are noticeable: a general raising of the rate of tuition, and a curtailing of expenditures. Thus it is reported that Phillips Exeter academy is to charge twenty-five dollars additional for tuition after this year, as it is found impossible under the present circumstances to meet the necessary expenses. Wellesley college and other institutions are considering plans for retrenchment. The plans for reducing expenses usually aim at a less number of professors and other officers, and adding to the duties already demanded, etc. How far this cost of economizing can be carried without seriously crippling the effectiveness of the academies and colleges is a serious question.

The College and the Teacher.

There was a time when the college did not concern itself with education in any other quarters than its own recitation rooms. It was often said that the poorest elementary schools existed in college towns. The college graduate sought occupation in the schools mainly as a stepping-stone to some other kind of labor. The term, the "New Education," became a subject of so much debate that the college began to investigate it, and the result was that education was a worthy subject for philosophical consideration.

Besides, the expansion of the public school system built up high schools, and numerous better-paid places came into being. The college graduate now thinks a position in a high school for life is not unworthy his ambition. In Chicago, two teachers' associations united some time ago in recommending to the board of education that high and grammar school principals hereafter shall be college graduates and the former have a doctor's degree. They should have gone further and recommended that college graduates who seek positions as teachers should have professional training.

The Busy World.

Australia's New Constitution.

The Australian Federation bill is under consideration in the British parliament. Mr. Chamberlain said the bill was a great and important step toward the organization of the British empire. It would unite Australia into a federal commonwealth, with free trade between the different parts of the federation, a common tariff for all the colonies, and common control of the national defense.

"What is good for Australia," he continued, "is good for the whole empire. The empire rejoices at this great, free, progressive movement." The British government will, however, retain the appeal to privy council; that is, that will be the court of last resort for Australia as the United States supreme court is for the states. It is proposed to appoint one representative each from Canada, South Africa, Australia, and India to the privy council. This will be an important move toward the consolidation of the empire.

The new constitution of Australia closely resembles that of the United States. States' rights are jealously preserved. In Australia the senate will be elected in the same manner as the lower house and the salaries will be the same.

Governor of Hawaii Named.

Sanford B. Dole has been appointed the first governor of Hawaii as a territory of the United States. Mr. Dole was one of the men who helped to overthrow the Hawaiian monarchy, and when the republic was organized he was elected president. He was born in Honolulu in 1844, and has lived on the islands all his life, so that he is thoroughly familiar with the islands and their needs.

Events of the Boer War.

The British are steadily closing their lines in on the Boers. In Natal, Gen. Buller has outflanked the enemy and compelled the evacuation of their strong position at Biggarsburg. The Boers set fire to the grass, and one of the greatest feats of the war was the dash made by Gen. Dundonald with 3,000 cavalry thru miles of smoke and flame. Buller has lately reoccupied Dundee, a town that has been in the hands of the Boers for about six months.

On the other side of the Drakensberg range the Boers have been steadily driven northward. The British have just occupied Ladybrand.

Gen. Roberts is pausing at Kroonstad preparatory to another dash towards Pretoria. On his way to Kroonstad he made an average of fifteen miles a day in the face of the enemy, a feat that won reluctant praise from continental critics. The Boers are massing at the Vaal river to oppose him.

Contradictory reports come from Mafeking. The Boers report that they have captured the place. A British report says that Col. Baden-Powell has surrounded a portion of them. The relief force from the South is nearly due there.

Boer envoys from Europe were received by their sympathizers in Hoboken on May 15.

Visit of the Shah to Europe.

The shah of Persia has just set out from his capital, Teheran, to visit the Paris exposition and various European courts. Muzoffer-ed Din is his name, which means the Victorious of the Faith. He is forty-seven years old and is credited with possessing all the virtues that endear a sovereign to his people. He is generous, kind and forgiving, celebrated for his clemency and always anxious to promote the welfare and happiness of his people.

On the assassination of his father on May 1, 1896, the present shah succeeded to the throne. He accompanied his father on his visit to Europe and so is well known there. It is said he wishes to see collectively the result of the inventive genius of the world, in order to introduce some of these arts and industries into Persia.

Revised Cuban Tariff.

The revised Cuban tariff will go into effect on June 15. A great deal of labor was expended on the new schedules, which have traveled back and forth between Washington and Havana half a dozen times. Most of the changes have been reductions, in order to encourage American trade with Cuba. For instance, the rates on railroad material have been reduced from forty to ten per cent. for a year. The rates on food products are not materially changed from the Porter tariff rates, as that was a great reduction from the Spanish rates. Strange as it may appear, this did not cause a reduction of the price of food in Cuba.

Denmark has a New Plan.

Denmark is considering a plan to end the Danish West India muddle by putting the islands under the control of a chartered company, thus cutting off both Germany and the United States from obtaining possession of them. It is perfectly well understood in Washington that unless Congress takes action at this session the United States government cannot become a purchaser.

The company proposes to rule the islands under the Danish flag. Officials who, under the present arrangement, do nothing except draw their salaries will be put out. It is proposed to start a bank at St. Thomas and organize a steamship line between St. Croix and St. Thomas, with side trips to Puerto Rico.

Germans Seize African Territory.

Lionel Decle, who is conducting a Cape-to-Cairo expedition, sends word from Uvula, north of Lake Tanganyika, that the Germans have forcibly seized all the Congo Free State territory up to Rusizi river, occupying 3,000 square miles of Congo territory. The Belgian officer withdrew from his station under threat of instant attack by the strong German force. The Germans burned the station; they were under instructions from Berlin.

Lodge's Thrust at Germany.

Senator Lodge made some remarks in an address the other day that have caused surprise in this country and something like consternation in Germany. He asserted that Germany was trying to secure the Danish West Indies and had designs on southern Brazil, where the number of German immigrants is large. The German officials have denied the charge. Conservative papers condemn Senator Lodge for uttering in open Congress what should have been expressed, if expressed at all, in executive session.

The Rand Gold Mines.

The great "Witwatersrand" gold fields of South Africa are located in the South African Republic. The Dutch word "Witwatersrand" means literally "White Water Range," and the strip of territory, a few hundred miles long and a few miles in width, to which it is applied, was but a few years ago considered a nearly worthless ridge, useful only for the pasturage of cattle and sheep. In 1883 gold was discovered; in 1884 the gold production was about \$50,000; in 1888 about \$5,000,000; that of 1890, \$10,000,000; 1895, over \$40,000,000, 1898, about \$55,000,000. Recent discoveries led to the belief that these mines are the long-lost "gold of Ophir," from which Solomon obtained his supplies.

Africa's Diamond Mines.

The Kimberley diamond mines, which are located in British territory, just outside the boundaries of the Orange Free State and about 600 miles from Cape Town, now supply 98 per cent. of the diamonds of commerce; the mines have been in operation about thirty years only. It is estimated that \$350,000,000 worth of rough diamonds (worth double after cutting) have been produced from the Kimberley mines since their opening in 1868-9. The owners of the various mines in this vicinity formed an agreement by which the annual output was limited to meet the annual consumption of the world's diamond markets.

The Educational Outlook.

The School Library Law.

DES MOINES, IA.—Funds for the support of school libraries are provided by the new Iowa School Library law. This law enacts that every school district must annually set aside from five to fifteen cents for each child of school age, the money to go toward the purchase of books for the library.

During the academic year the books are to be kept in the school-house, but during vacation time they will be kept for the use of the pupils in the house of some one selected by the board.

It is suggested that country stores be chosen for this purpose, as the books may be loaned to persons not pupils. The proprietors of the stores are naturally willing, owing to the additional trade which the presence of the books would bring to them. The books to be purchased are limited to a list which the state board of education is to make out. At present nearly all the Iowa cities and towns are availing themselves of the law permitting school directors to spend \$25 a year on books; women's clubs are aiding largely in the work, and in the rural districts the new regulations will probably do much.

School Self-Government.

HOPKINSVILLE, O.—The plan of self-government of the pupils which has been so successful elsewhere has now been adopted by the Hopkinsville public high school. By this arrangement the pupils make their own ordinances, which are enforced by officers of their own choice. Public sentiment is thus made the real governing force of the school, and at the same time the pupils receive in an impressive manner a lesson in civic government.

Each room in the high school elects two members of the council and one member of the board of judges. All of the rooms acting together, and using the Australian ballot system, will elect the executive officers. These consist of a mayor, a clerk, a treasurer, and a prosecuting attorney. The juvenile statesmen have not adopted the system of conventions, but prefer nominating candidates by the purely democratic idea of the primary. This work has all been done without omitting a single recitation in any of the regular studies of the high school course.

Ungraded Classes in Philadelphia.

PHILADELPHIA.—The advocates of the "ungraded class" have won a victory. The board of education has authorized their establishment in schools to be designated by the committee on elementary schools, with the provision that only such teachers shall be eligible for election by the sectional school boards to take charge of ungraded classes as shall be specially certified by the superintendent.

The ungraded class has been tried and found successful in St. Louis and elsewhere. Its chief advocate here is Supt. Brooks. The ungraded class would be made up of backward and untractable children and inveterate truants. It is proposed that from twenty to twenty-five pupils shall constitute a class which shall be presided over by a teacher who has marked ability in managing backward and unruly children. These teachers are to be elected by the local school boards and to be under the control of the principals of the schools. In order that the local boards may not be able to elect incompetents, it is provided that only persons holding a special certificate issued by the superintendent of education on the recommendation of the department shall be eligible. The proposal of Dr. Brooks that teachers of ungraded classes be paid a little more than the other assistants in the elementary schools was rejected by the board.

Supt. Fowler to be State Superintendent.

BLAIR, NEB.—Supt. W. K. Fowler received the Republican nomination for state superintendent of public instruction. The nomination came to him unsolicited. He was not present at the convention and had never announced his candidacy. Mr. Fowler is a native of New Jersey. After being graduated from the grammar schools of New York city, he attended the city college there, and then studied at Monmouth, Ill., and in Edinburgh, Scotland. In 1883 he came West and his ability as an educator was at once recognized. After being engaged in teaching for some time Mr. Fowler spent a year traveling abroad, returning in 1891. He has just closed his fifth year as superintendent of the Blair city schools. Mr. Fowler has had experience in teaching and managing. For five years he was principal of the Scribner schools. He has a business education too. In 1890 he established the North Bend *Argus* and for several years was editor and proprietor of the *Scribner News*. It is generally acknowledged that his character and abilities pre-eminently fit him for the state superintendency.

Curfew Law Enforced.

BOSTON, MASS.—Mayor Champlin, of Cambridge, has ordered the police to enforce the curfew law, and has announced in addition that at nine o'clock every evening a signal will be given on the gongs and whistles of the fire alarm system. The curfew ordinance was adopted in Cambridge in 1898, but there had been no curfew bell. The law provides that children un-

der sixteen years of age shall not loiter or remain on any street, highway, or other public place after nine o'clock in the evening, unless accompanied by or under the control of a parent, guardian, or other adult person, or unless performing or returning from employment or from the performance of some duty, directed in writing by a parent, guardian, or other adult person. Of late it had been considered a dead letter.

New Plan for Vacation School.

BOSTON, MASS.—The associated charities of Lynn will follow a new plan this summer in conducting a vacation school. Nature work will be made a specialty. The session will be held in the Washington street school, close to Lynn Beach, where the children will be taken every day that the weather is favorable. Trolley and steamboat trips will also be taken by the children to various places of historic interest.

Champaign Captures A Rare Gift.

CHAMPAIGN, ILL.—The magnificent collection of insects made by the late Mr. Andreas Bolton has been presented to the University of Illinois. Mr. Bolton was a native of Germany who settled in Chicago. Becoming interested in entomology, he established a laboratory in his home, and upon his retirement from business, gave his entire time to collecting and setting insects. He paid out over \$30,000 in purchasing collections and making exchanges and thus brought together what is probably the second greatest collection in the country. Its value cannot be estimated, but independent American and English experts have said that it could be quickly sold for \$50,000, while it could not be duplicated for any price. Mr. Bolton's will provided that his executors should give the collection to the institution which would make it most serviceable to entomological science. After considerable investigation the collection was handed over to the University of Illinois. The latter is naturally greatly gratified, not only on account of the great intrinsic value of its acquisition, but especially over the manner in which it has been acquired. The choice of the executors is a testimonial to the excellence and breadth of the scientific work of the university, as also to the high merit and ability of Prof. Stephen A. Forbes, the head of the entomological department.

Primary Schools Unsanitary.

BALTIMORE, MD.—The public school committee of the Arundell Good Government Club has reported on the result of its investigations made during the past year. A sub-committee was appointed last year to examine into the janitor's service in the school. Ventilation conditions were found to be bad. Principals and teachers usually attend to opening windows after school, otherwise it is not done. Frequently the buildings are closed directly after school hours and not aired until the next morning. The bad air consequently never gets thoroughly out of the building. Sometimes thru the efforts of individual teachers the atmosphere of the school-room, even in the most unwholesome surroundings, is kept pure, but the large modern buildings were hot in the extreme, pupils and teachers unconsciously showing lassitude and fatigue. The lack of applied intelligence and co-operation between teachers and firemen makes much of the trouble.

Drinking water troubles could be overcome by careful planning which would put faucets on every floor accessible to pupils. The better distribution of heat would relieve overcrowding following the use of rooms now idle from cold.

The sub-committee strongly condemns the condition of the primary schools. Whereas children of primary school age are far more susceptible to maladies arising from bad sanitation than their elders, yet when attention is paid to such problems in high and grammar schools the primary schools are neglected. In pursuance of this policy there has been a tendency for years in Baltimore when a grammar school building becomes too bad for its purpose, to provide a new school for it and to use the old building for a primary school. The result is that out of forty white primary schools attended by over 22,000 children, the committee unhesitatingly condemns eleven, with an attendance of over 5,000 children, as harmful to the health and training of primary school children. Out of ten colored primary schools four are in a hopelessly bad condition.

The committee recognizes the desirability of introducing pictures into the schools. The Municipal Art Society, which is managing this matter, however, has great difficulty in finding primary schools fitted for the purpose. It has decorated primary No. 4 and has plans for making primary No. 37 a model art building, but most of the primary school buildings are quite unfit both for sanitary and artistic reasons, to warrant money being spent upon them, altho it is especially desirable to give such advantages to the great mass of children attending school at that age.

The committee records with pleasure that the old rule of cleaning buildings but once or twice during the school year has been recently abolished and janitors are ordered to clean them as often as necessary.

The Good Government Club, by resolution emphatically indorsed yesterday the appointment of Mr. Van Sickle as superintendent of instruction in the public schools on the grounds of qualification and fitness only and expressed its satisfaction at the divorce of the public schools from politics.

For the ensuing year the following ticket was elected: President, Miss Jane Brownell; vice-presidents, Mrs. William M. Elliott, Mrs. E. A. Robinson; secretary, Miss Julia R. Rogers; treasurer, Mrs. John R. Cary; executive committee, Miss Elizabeth M. Carroll, Mrs. John F. Goucher, Mrs. Alcaeus Hooper, Miss Francis H. Hoffman, Mrs. Franklin Mall, Dr. Lilian Welsh.

New England Training School Council.

The third annual meeting of the New England Training School Council will begin on the morning of May 19 at the Boston Normal school. Prof. Will S. Monroe, of Westfield, Mass., will deliver an address on "The Function of the Training School in Relation to the Child," and Dr. A. E. Winship, of Boston, will speak on "The Function of the Training School in Relation to the Teacher."

Among the topics that have been suggested for general discussion are: "How much Time each Day should be Spent in the Training School by the Normal Students?" "The Problem of Imitation: To what Extent Beneficial in Training School Work? To what Extent Detrimental?" "What is the Effect of Training School Work on the Child?" "How may we Instill a Stronger Professional Spirit in our Young Teachers?" "Are the Results Beneficial or Otherwise when a Normal Student is Allowed to Teach her own Class as a Preparatory Step to Teaching Children?"

The officers of the council are: president, Prin. Gertrude Edmund, Lowell Training school; vice president, Miss Adelia M. Parker, of the Lowell Normal school; secretary, Miss Adelaide Jackson, of Teachers college, New York city.

Library Bureau of N. E. A.

Among the features in the coming meeting of the National Educational Association at Charleston will be the Library Section. An opportunity will be afforded for discussing the important question of "The Relation between the Work of the School and the Work of the Library." Two addresses on the subject will be offered, one by Miss Mae E. Schreiber, of Madison, Wis., presenting "How to Direct Children's Reading," the other by Mr. H. L. Elmendorf, of the Buffalo Public Library, on "The Greater School, or the Library plus the School, Greater than Either." A paper on library extension with special reference to the traveling library movement will be read by Mrs. Eugene Heard, superintendent of traveling libraries of the Air Line, Middleton, Ga. Teachers and others interested are invited to enter the general discussion of these topics. The secretary, Miss Eileen Ahern, Library Bureau of the National Education Association, Chicago, will be glad to receive any suggestions that will aid in making the meeting successful.

Chicago Notes.

CHICAGO, ILL.—The Sixth Annual Congress of the Illinois Society for Child Study was held May 11 and 12. Among the subjects discussed was the promotion of educational methods of instruction in Sunday schools. A paper on cultivation of the sense of beauty was read by Miss Lucy S. Silke, one on "The Psychology of Literary Expression," by Prof. A. W. Moore, of the University of Chicago. Miss Ellen Gates Starr spoke on the subject of school-room decoration.

CHICAGO, ILL.—The reopening of the Armour Institute will be marked by improvements aggregating \$58,000 and the addition of five instructors to the corps. Among the latter will be: to the English department, Mr. Stewart Sabin, formerly principal of the Medill high school; to the department of electricity, Prof. Coolidge of the Massachusetts Institute of Technology; to the department of business law, Prof. W. L. Walworth.

CHICAGO, ILL.—So successful has been the plan of conducting a school on the premises for the younger employees, inaugurated by a big department store some time ago, that the superintendent of compulsory education is urging other proprietors of stores to do likewise. Favorable replies have been received from six large establishments, and the schools will soon be instituted. The plan is to employ two teachers in each store, and to send the children to the school-room in squads. They are taught, writing, reading, and other elementary branches. The necessity for these schools arises from the fact that many parents make false affidavits regarding the age of their children in order to enable them to go to work, and help support the family. And as a parent's word cannot be doubted, the school authorities have to permit the children to work, although it is apparent that they are under age. In this way many have to go to work without even a common school education.

CHICAGO, ILL.—According to the authorities, the *Daily Maroon*, the new Chicago university periodical, has belied its name and earned the epithet of "yellow." The result is that it has been suspended for an indefinite period. The trouble was caused by an article headed "Divinity Scandal," being a graphic account of the alleged love-making of a divinity student, in the department of Semitic languages. Professor Robert F. Harper, associate professor of Semitic languages, who is a brother of the president of the university, and a personal friend of the aggrieved divinity student, was the chief complainant, and the faculty suppressed the publication.

New York City and Vicinity.

The graduating class of the New York Normal college planted a tree May 11 in honor of John Ruskin.

The five vacant fellowships of the academic year 1900-1901 in Teachers' college have been awarded as follows: in pedagogy, to Messrs. Frank P. Bachman, of Valley City, N. D.; Edwin C. Browne, of Seymour, Conn.; Rufus C. Bentley, of San Rafael, Cal.; John W. Hall, of Greeley, Col. In manual training to C. L. MacMurray, of Chicago. Each carries with it a stipend of \$500. There were thirty-one applications.

The closing meeting of the year of the New York educational council will be held May 19 in the Law Room, University Building, Washington Square. The executive committee announce that the council will be addressed by two of the leading educators in this section, Hon. Nathan C. Schaeffer, superintendent of public instruction of Pennsylvania, and Hon. Charles R. Skinner, superintendent of public instruction of New York. Mr. Schaeffer will speak on the topic "Learning to Think." Principals and teachers are cordially invited.

At a regular meeting of the Graduate Club held recently at Teachers college, Prof. Richard E. Dodge, secretary of the faculty committee on secondary teaching, presented for discussion the subject of "Training for Secondary Teachers."

"Advanced Professional Training for Teachers" was the subject of an address by Dean Russell, at the meeting of the American Social Science Association held in Washington, May 9. The Students' Federation produced a play entitled "Mr. Bob," on the evening of May 8.

A reception of the Kraus Alumnae Kindergarten Association will be given at the hotel San Remo on the evening of May 26, to Mrs. Maria Kraus-Boelte to celebrate the completion of her fortieth year of kindergarten work.

It is announced that Mr. Andrew Carnegie contemplates creating an annual prize, to be awarded by the Society of American Artists, for the best oil painting by a resident American artist. There is to be no limitation as to sex, age, or subject except that portraits will be excluded. The amount of the prize will probably be \$500.

The laying of the corner stone of the new school building of the Union Free School District No. 9, Oyster Bay, L. I., took place May 15.

Teachers to be Paid.

There should now be little delay in the payment of the teachers' salaries for the month of April. The board of education by hard, earnest work has succeeded in organizing a financial department sufficient for the moment's need. Mr. Thomas E. Bussey has been elected treasurer. The payments, however, cannot be made at once as the finance committee has decided not to make requisition immediately for the \$1,321,117, the first installment of the city fund to be asked for by the department of education under the Davis law. The board it is believed, desires to make some further arrangement as to the placing of the money in convenient banks, and a few days will be required yet to complete the pay rolls. It is customary, too, to give suitable notice to the city's financial officers of so large a demand, in order that proper provisions may be made for the transfer of the money. The pay rolls of the Brooklyn teachers for April were sent by the treasurer to Secretary Brown yesterday.

Mr. Bussey was elected at the meeting of the board held last Saturday night. The assistant treasurer has not yet been elected, nor have the auditors. The salary of the treasurer has been fixed at \$5,500 and that of the assistant at \$2,750. The bond required from the former is \$100,000, and from the latter \$50,000. It is true that the comptroller refused to accept Mr. Bussey's bond, his reason being that the Davis law made no provision for the filing of a bond of the treasurer of the board of education. This, however, does not prevent the treasurer from exercising his functions, as the bond has been accepted by the finance committee of the board of education, which renders the act of the treasurer valid. Some further delay, too, in the payment of teachers may be caused by the pay rolls being rather muddled, owing to the fact that there are not enough clerks to attend to the work.

Owing to an unforeseen circumstance the board of education will find itself not quite as wealthy as it supposed. Deputy City Chamberlain John H. Campbell has stated that the interest on the \$20,000,000 educational fund must be turned into the city sinking fund. The interest will amount to from \$20,000 to \$30,000 in a year.

Another difficulty which the board have encountered is the refusal of the council to approve the bond issue of \$3,500,000 for school expenses, on the ground that if so much money were spent on schools there would be none left for sewers and street paving. This, however, does not affect the \$1,321,117 to be used for payment of teachers' salaries for April.

Mr. Bussey, the new treasurer, became a clerk in the board of education in 1892 and assistant secretary in 1898. His bond was issued by the United States Fidelity and Guarantee Company.

Brooklyn Teachers Will Go to West Point.

The annual excursion of the Brooklyn Teachers' Association will take place June 2 to West Point. The opportunity is an unusual one, as permission has been obtained from the commandant to land the party at the government dock, a privilege that has not been accorded for several years.

The General Slocum, one of the finest boats on the water, has been chartered for the occasion, and will leave South Fifth street dock promptly at nine o'clock, and Bridge dock half an hour later. All members of the association will be admitted to the boat on presentation of membership ticket. It is a three hours' run to Empire Grove, and about one hour from Empire Grove to West Point. The boat will leave West Point for return home at 3:45 P. M., stopping at Empire Grove at 4:45 P. M., and will reach Brooklyn at 8:15 P. M.

Arbor Day.

Arbor day was celebrated May 4 in the 245 schools of New York city and in all the schools of the state. In the country districts the pupils planted trees, but in the city where most of the schools are surrounded by paved streets they had to content themselves with singing songs of spring and reading about the life and growth of trees and vines. On the lower east side planting was obviously impossible, but the pupils had some time ago, in anticipation of the day, sown seeds in boxes and cans which when examined on Arbor day were, for the most part, found to have sprouted, and so furnished appropriate texts for the teachers to dilate upon. The reports from the various committees which look after the youthful arboriculture showed that the institution had done great good.

When Arbor day was first observed in New York state in 1889, very few of the schools, even in the country districts, had grounds which were improved, but since that time great changes have been made. In all, 214,571 trees have been planted by children attending the public schools since the law relating to Arbor day went into effect, and the number would undoubtedly be greater had not the room left for new trees been greatly decreased with each succeeding year. Fewer trees were planted last year than on the earlier Arbor days, but the school authorities say that more school districts are taking up the work, which shows the interest in it is not decreasing.

Children from nearby New York city schools visited Central park with their teachers in the afternoon and held exercises consisting of songs and recitations from Wordsworth and other poets of nature. The Tree Planting Association provided 20,000 trees to be planted thruout the state yesterday. Most of the planting was done in the villages and small cities.

New York School of Pedagogy.

The prospectus of the pedagogical department of New York university for 1900-1901 announces in addition to the changes in the rules and the courses of lectures which have already been mentioned in this column, the following changes:

The requirements for the two degrees towards which work in the department leads, have been revised and in part increased. The candidate for the degree of master of pedagogy is required to complete all the courses grouped under the first year. Hitherto credits for elective courses were granted towards the master's degree, and the student was free to pursue courses in both the first and the second year groups. The new rule will simplify the work of the student, and defines more clearly the academic value of that work as indicated by the degree. For the degree of doctor of pedagogy, the candidate under the new rules must present full credits for four major and seven minor courses. This rule represents an increase of two minor courses over the provisions of the old rule. These changes go into effect with the new matriculations next September.

The prospectus announces two additional seminaries, or half-year courses, one on "The Psychology of Language and its Educational Applications," by Prof. E. F. Buchner, and one on "The Practical Applications of the Psychology of Expressional Activities," by Prof. C. B. Judd. The work done by the student in these research courses is not specifically credited in making up the requirements for a degree.

A marked change appears in the provisions for the scholarships. Under the old rules, the holder of an endowed scholarship was not except from the payment of tuition. When the new rule, which is a special act of the university, goes into effect next year, each holder of the nine endowed scholarships will receive free tuition during the term of his appointment, thus rendering the entire income of the endowments available for the holders thereof.

The lectures in all courses in the school ended on Friday, May 11. The examinations began Saturday, May 12, and end on Saturday, May 19, exempting the final oral examinations of all candidates for the degree of doctor of pedagogy, which will occur in the third week of this month.

Mr. Horatio R. Harper Injured.

Horatio R. Harper, one of the famous family of publishers, has been injured by the bite of a horse, and is now lying seriously ill at his home at Sands Point, L. I. The horse bit off a portion of his upper lip, and he will be disfigured for life. It happened May 8. Mr. Harper had just gone into the stall when the animal turned upon him and caught his upper lip between its teeth, striking at the same time with its fore feet. He was rescued by a groom.

Interesting Notes from Everywhere.

NEW ORLEANS.—Professor Edwin A. Alderman, for several years president of the University of North Carolina, has accepted the presidency of Tulane university.

WILLIAMSTON, MASS.—At the annual meeting of the trustees of Williams college, Paul M. Rea, Williams, '99, was appointed to be assistant in biology next year. It was voted that German be placed on the same basis as French as a required freshman course.

KANSAS CITY.—It is stated that the Rev. T. H. James, of Oakley, Ks., will endow a great Methodist university in Kansas City with \$1,000,000. He has recently inherited \$20,000,000 in England, and has already given \$300,000 to establish a Methodist university in Oakley and \$70,000 to the Bethany Hospital, Kansas City, Ks.

HARRISBURG, PA.—The following have been appointed to conduct the examinations at the Westchester normal school on June 5: Deputy Supt. Henry Houck; Prin. A. C. Rothmel, of the Kutztown normal school; Supt. Geo. D. Howell, of Scranton; Supt. E. C. Howard, Wayne county; Supt. R. K. Buehrle, Lancaster; Supt. Frank Jarvis, Wyoming; Miss Louisa Boggs, superintendent of Bristol; Supt. E. M. Kapp, of Berks county.

The Philadelphia board of education is considering the addition of dressmaking and dress cutting to the curriculum of the commercial high school for girls.

BOSTON, MASS.—The Arlington school committee has re-elected Mr. Frank S. Sutcliffe as superintendent of schools at a salary of \$2,500 a year, an increase of \$500. He has been at Arlington two years, and was formerly at Manchester, N. H.

PHILADELPHIA, PA.—Prof. B. West Clinedinst, of New York, has been appointed director of the School of Illustration in the Drexel institute to take the place of Prof. Howard Pyle, who will resign at the close of the present term.

RALEIGH, N. C.—Rev. John E. White, of this city, has been elected president of the Baptist Female university situated here.

CHAMPAIGN, ILL.—The board of trustees of the University of Illinois has made a number of appointments in the new department of household science which is to be established next year. The professor in charge of the department will be Miss Isabel Bevier, now professor of chemistry and household sciences at Lake Erie college, Painesville, Ohio. Miss Bevier is a graduate of Wooster university, and has done post-graduate work at the Massachusetts Institute of Technology and at Harvard. She has several times been appointed by the department of agriculture at Washington to make investigations on economic questions. She will be assisted at Champaign by Miss Elizabeth C. Sprague, who was appointed instructor in the department. Miss Sprague is a graduate of the Cincinnati high school and of the Massachusetts Normal School of Household Arts. Provision is being made for the new department in the agricultural buildings.

LENNOXVILLE, CANADA.—The corporation of the University of Bishop's college has appointed principal in place of Rev. T. Adams, resigned, Mr. J. P. Whitney, M. A., of Kings college, Cambridge. Mr. Whitney took his B. A. degree in 1881, after a brilliant career, in which he won two scholarships. For some years he was an assistant lecturer at Owens college, Manchester, in history, and has since 1895 been lecturing for the historical tripos at King's college, Cambridge.

FRYEBURG, ME.—The following will be the subjects of summer instruction in the Fryeburg School of Methods of the Maine Chautauqua Union: Reading, writing, history, English language and literature, music, drawing, geography, child study. In all but the last, advanced methods and principles involved in teaching these subjects will be presented in lectures, and in certain cases field work and model classes. In child study Mr. Leo H. Archibald will carry on a series of conferences on the nature and growth of the child mind, involving study of temperaments and methods of dealing with those of various sorts. The course is said to be adapted to teachers of all grades, including those of the high school.

Recent Deaths.

BOSTON.—Percy S. Thurston, for fourteen years janitor of the Hemenway gymnasium at Harvard, died May 8 of tuberculosis. He was a great favorite with the students.

BALTIMORE, MD.—Prof. Thomas Craig, of the chair of mathematics in Johns Hopkins university, died May 8, aged forty-four years. He was a native of Pittston, Penn. He was graduated from Lafayette college, and took a post-graduate course at Johns Hopkins. He had been connected with the faculty of the latter institution for over twenty years.

DETROIT, MICH.—Richard Storrs Willis, son of the founder of the *Youth's Companion*, died here May 7. Mr. Willis had edited several papers. He was well known as an author and educator.

Manual Training for first and Second Year Children.

From the course of study prepared by a committee of leading Colorado teachers under the direction of State Supt. Grace Esby Patton. THE SCHOOL JOURNAL is indebted to the present State Superintendent of Colorado, Mrs. Grenfell, for the photographic representations illustrating the course.

MODELING.

The work of this year is arranged on the supposition that pupils have studied objects about them, both natural and artificial; that they have been led to compare and classify their forms, and to see that many of them are more or less related to elementary geometric forms. These forms, then, together with natural forms, become subjects to be expressed by means of clay, paper, cardboard, etc. The geometric forms or "type solids" particularly considered and modeled are the following:

| | |
|--------------|-------------------------------|
| Sphere | Cube |
| Cylinder | Hemisphere |
| Square prism | Right-angled triangular prism |

In connection with the above models, common objects like the following: based on the sphere, marble, apple, return ball, etc.; based on the cube, playing block, box, basket, etc.; based on the cylinder, bottle, rolling pin, box, spool, etc.; based on the hemisphere, bowl, hat, cap, etc.; based on the square prism, box, trunk, etc.; based on the right-angled triangular prism, a tent, chicken coop, etc.

Bodies combining the above solids may be modeled also.

EXERCISES IN PAPER FOLDING.

The following may be produced by folding pieces of paper five inches square. Each fold should be made in response to explicit directions from the teacher. All work to be done on the desk and not in the air:

| | | |
|----------------|-------------|-------------------|
| Book | Roof | Seed box |
| Window | Tablecloth | Screen |
| Card case | Kite | Handkerchief case |
| Hanging basket | Soldier cap | Envelope |
| Fan | Card basket | Box |
| Frame | Boat | Portemonnaie |
| Shawl | Wall pocket | Card tray, etc. |

The illustration on page 549 and on this page and

the following page show the work of children in making objects of this kind.

CUTTING AND MARKING DESIGNS OF COLORED PAPER.

The first exercises may consist of arranging circles, semi-circles, squares, oblongs, and triangles provided by the teacher. They may be cut from stiff paper or purchased already cut. Subsequent exercises may require the pupils to cut these forms and afterwards arrange them.

1. Repetition; horizontally, vertically, or radially. Examples, series of equidistant circles placed in rows vertically or horizontally, or regularly around one circle as a center piece.

2. Alternation. Arrangements similar to the above, except that there is an alternation of forms, as of squares and circles; or simply of position, as, first a square on its diameters, then another on its diagonals.

COLOR.

Some knowledge of color may be imparted in connection with the above exercises; in which event the papers should represent the "leading colors," viz., red, orange, yellow, green, blue, and violet. Arrangements to consist of one color only. If it is desired to make permanent arrangements, the papers may be pasted on oblongs 3½ inches by 7 inches, or 3 inches by 9 inches, for borders. or on squares 7 inches by 7 inches for radial designs; Gray cardboard makes the best background. Paste need not cover the entire back of the units, and should be spread very thin.

Directions regarding similar exercises may be found in the primary drawing manuals published by the Prang Educational Company, Chicago; and Ginn & Company, Boston.

Second Year.

MODELING.

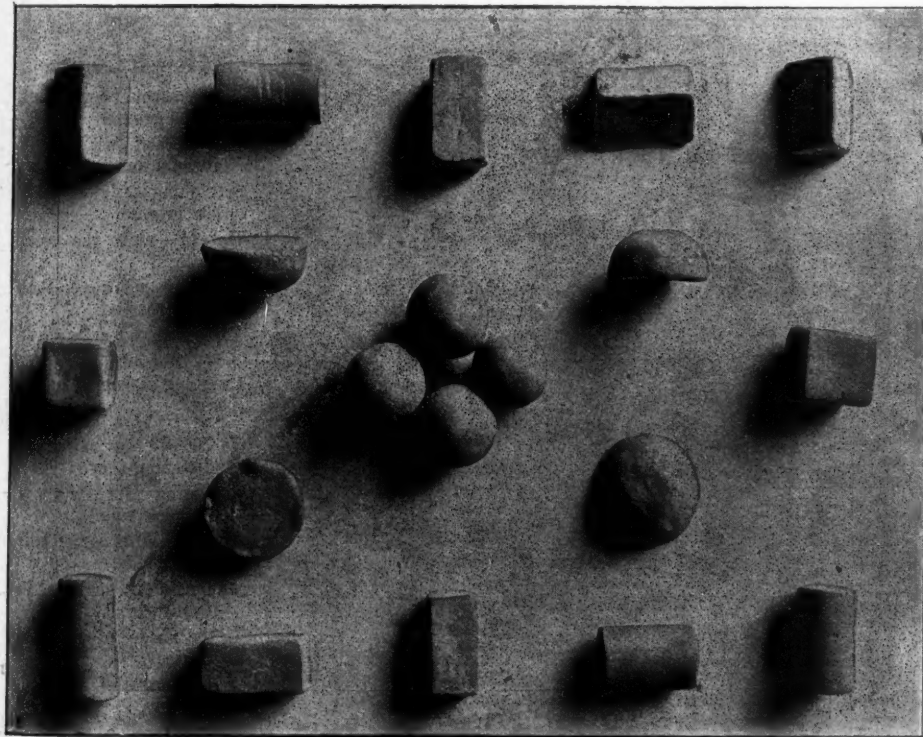
As in the first year, the children continue to study the forms of objects about them. Incidentally they are led to discover fundamental forms like the following:

Ellipsoid.
Ovoid.
Equilateral triangular prism.
Cone.
Square pyramid, etc.

The above, together with common objects, are the subjects to be expressed by means of clay. Perfect expression is not expected. Be contented with the results if they present even a few of the most evident characteristics of the objects. Illustrations representing reproductions of children's work are shown in the accompanying plates.

EXERCISES IN FOLDING

Pupils who have never done any fold-



Type Solids made of Clay.—First Year.

nig may advantageously do the exercises of the first year, to which may be added, folding quarter-inch hems, quarter-inch tucks, bias bands, etc.

CUTTING AND MAKING DESIGNS OF COLORED PAPER.

From the elementary forms modeled in clay we may derive the following, which may be expressed by cutting paper :

- Ellipse.
- Equilateral triangle.
- Ovoid.
- Isosceles triangle.

The above, together with circles, squares, etc., of the first year, may be used to express the principles of repetition and alternation.

The plane figures already derived from solids may also be combined in the following crosses, viz.: Greek, Latin, Maltese, and St. Andrew's.

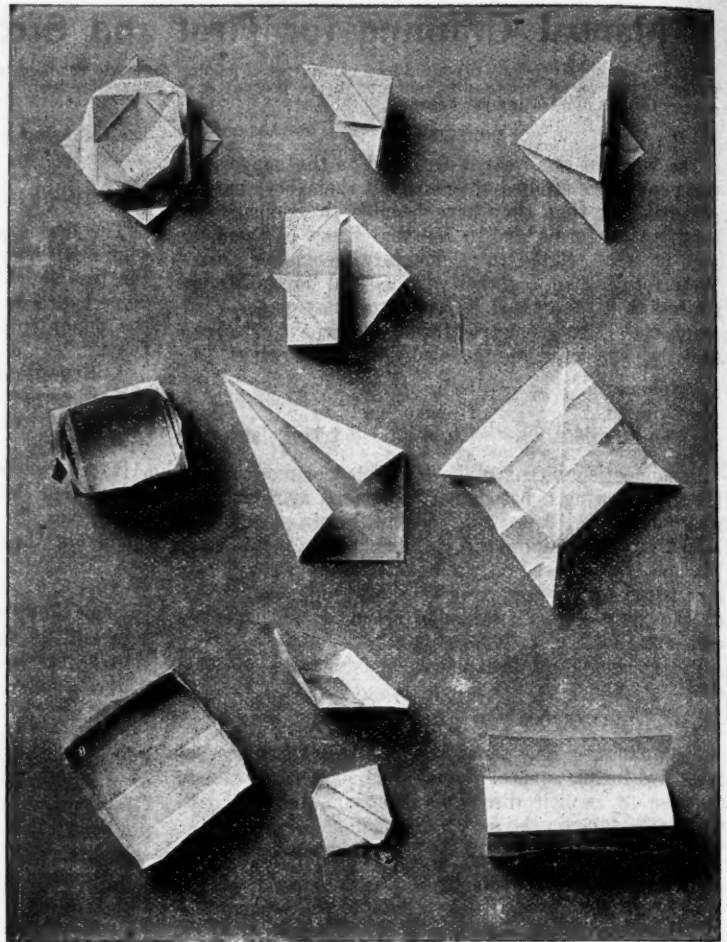
They may also be combined to represent "patterns" of the following subjects. The pattern of the surface of the cube, for instance, is made by combining six squares :

- Cube.
- Right-angled triangular prism.
- Equilateral triangular prism.
- Square prism.
- Pyramid.

COLOR.

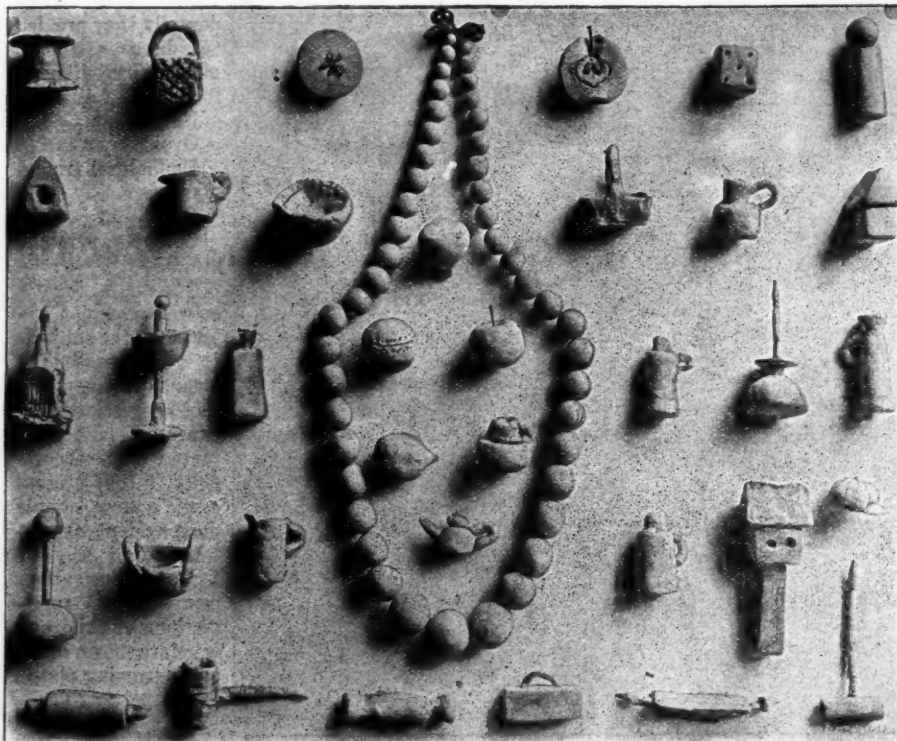
If colored papers are used they should consist of the "leading colors," viz.: red, orange, yellow, green, blue, violet, and a tint of each, viz.: light red, light orange, light yellow, light green, light blue, and light violet. The colors to be used alone or a "leading color" with its "tint." For permanent arrangements follow the suggestions in the first year's work.

In both the first and second years, exercises with sew-



First Year Exercises in Paper Folding.

ing cards, dried peas, etc., are useful in attaining the same ends. The carving of soap has also been successfully done in some schools. The exercises given, however are fundamentally the most important.



First Year.—Common Objects based on type solids, made of Clay.

How It Came.

A tiny shoot peeped out
of the ground
And opened wide as it
gazed around ;
Stretching its dainty leaf-
lets bright
Up—up—up to the west
sunlight;
Reaching sideways, that
way—this—
To catch the earliest
zephyr's kiss ;
Climbing higher in balmy
air

To meet the raindrops
glistening there ;
Spreading its wavy
branches wide
Till song-birds came their
nest to hide,
And children gathered in
joyous glee
In the shade of the old
oak tree.
All because of a hand,
they say,
That planted a seed one
summer's day.

—SIDNEY DAYRE.

Closing Day Exercises.

Military Gymnastic Drill.

By IMOGEN A. STOREY, Tennessee.

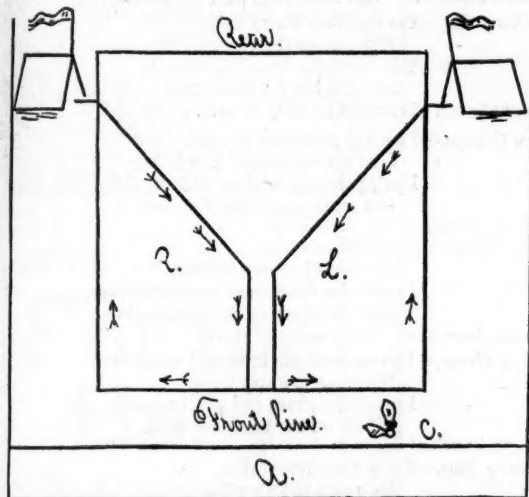
For this drill is required an uneven number of children, one more boy than girl. They should be as near the same size as possible.

The costume is that of the United States soldier. The girls' dress is the same except that a skirt with stripes at the sides is worn instead of trousers. The rifle is a light wood toy, black, tied with the national colors. The leggings can be made at home out of tan cloth, and the suits can be made as cheap or expensive as desired.

The odd boy should wear a captain's uniform, for he is to drill this miniature company. The more trappings these soldiers have on the prettier will be the effect. A great deal depends on the captain and he should be selected with care, as should also the leaders in the marching. The stage or floor used for this drill, is laid off as shown in diagrams, to insure less mistakes in marching and floor positions.

The company should enter from two tents as shown in diagram (A). From the top of these tents "Old Glory" should float. The stage can be made very attractive by putting boughs, vines, and flowers, around the tents to represent woods.

The captain enters (to music) from the tent on the left and takes his position a little to one side, in front of the front line as shown in (A). After he has taken



his position he gives the command, "Company forward—march!"

The company enter, the girls from the right tent, and the boys from the left, following the lines as indicated by arrows in (A), keeping exactly even with partner on opposite side.

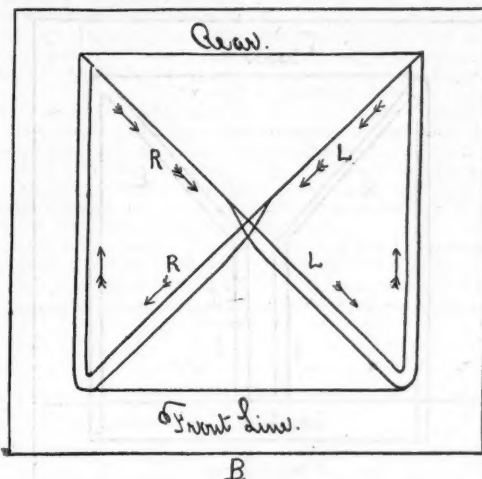
The rifle is carried across the right shoulder, held in place by the right hand; left arm straight down at left side. Each child should keep about an arm's length from the one in front in marching and halting.

When the leaders reach the front line, the command is given "Right and left—turn!" They turn sharp corners and follow lines as shown by arrows in (A). On reaching the rear the command, "To the rear, oblique—turn!" is given and executed. These commands should be given soon enough to be executed at the last word.

After making this turn they follow lines as shown in (B), marching to the center. At the command "By twos—march!" they form by twos, every other child crossing to partner on opposite side, the first couple or leaders, following the line R. They should take short steps so as to enable the next on line L to catch up. There are now four leaders instead of two.

On reaching the front line the command "Right

and left—wheel!" is given. In making this wheel, the children on the inner lines (B) take very short steps, while those on the outside lines take longer steps than in ordinary marching.



On reaching the rear line this same wheel is again executed as shown in (C). Follow double lines as arrows indicate.

When the first four reach the cross line (C), the command, "Single file, right and left—turn!" is given, and when the leaders reach the end of this line the command follows, "Company—halt!" The cross line can be made long or short to accommodate the company. "The command to halt is given as either foot comes to the floor and the rear foot is brought up to it."

The music ceases on command "Halt." The music should consist of national airs as near as possible.



Fig. 1.



Fig. 2.

I. Command, "Carry arms!"

Grasp rifle with the left hand above the right, first count. Bring rifle to position (Fig. 1), second count. Bring left arm down to left side, third count.

II. Command, "Right dress."

Bend the left elbow and place the closed fist at the waist line, the point of the elbow touching the arm of the "soldier" on the left. Turn the head, facing right. The leader to the right does not turn the head and the leader on the left does not bend the elbow. At command "Front," the arm is dropped at side, and head turned again to the front.

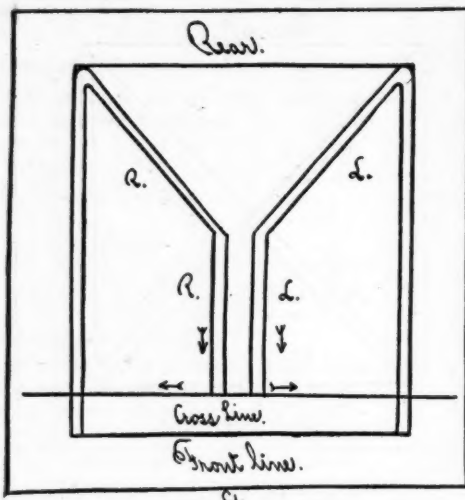
III. Command, "Shoulder arms."

Grasp rifle with the left hand above the right, and lift rifle to right shoulder, first count. Left arm down at side, second count.

IV. Command, "Carry arms." (Same as I.).

V. Command, "Arms port."

Grasp rifle (same as before) with left hand, first count. Bring to position, as shown in (Fig. 2), second count. Back to "carry" position, third count. Left arm at side, fourth count.



VI. Command, "Present arms."

Same as V., only the rifle is held parallel with the middle of the body; elbows are half bent, first and second counts. Back to position, third count. Left arm at side, fourth count.

VII. Command, "Order arms."

Grasp the rifle with the left hand as before, first count, Let it slip thru the hands until the butt rests on the floor, second count. Left arm at left side, third count.

VIII. Command, "Carry arms."

Signals from piano are now used instead of counts. Raise rifle with right hand, grasp with left, and place in position (carry position) first signal. Left arm at side, second signal.

IX. Repeat V. and VI., making eight counts in each, by repeating twice.

X. Grasp rifle as before, first count. Bend the right elbow, bring left arm diagonally forward up, and charge straight forward with the left foot, second count. Back to first count, heels together on the third count. Left arm down at side, fourth count. Repeat fifth, sixth, seventh, and eighth counts.

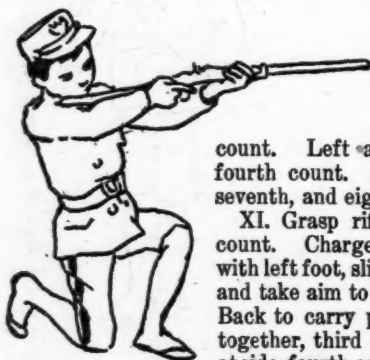


Fig. 4.

XI. Grasp rifle as before, first count. Charge straight forward with left foot, slip rifle up to position and take aim, second count. Drop on right knee, third count. Hold this position, fourth count (Fig. 3). Back to charge position, fifth count. Heels together and rifle to carry position, sixth count. Left arm at side, eighth count.

The rifle is now placed on the shoulder with three signals from the piano.

At the command "Center—face!" those on the right turn a quarter face to the left, and those on the left the same to the right. The lines are now facing each other, the leaders being at the ends.

At command "Forward double time—march!" they start to run, following the new leaders along the outside

lines R and L in (C), and on reaching the front line cross each other midway. Then running back to the rear line they again come down the lines R and L in (B).

When the leaders reach the front line the captain commands "Slow time on toes—march!" As they rise and march on their toes the music is now changed to very soft and slow. Turning sharp corners they march out on lines R and L in diagram (A).

On the second and sixth counts in XI., and the second, third, fourth, and fifth counts in XII., a report from outside the room would make the positions more realistic.

The Rainbow.

By MARY E. ROWE, Indiana.

An exercise suitable for Arbor day, Decoration day, May day, or for the close of school.

Characters.

Goddess.—Dress of white with golden crown and scepter, seated in an armchair with feet resting on footstool.

Attendant.—Dress of white with wreath and garland of flowers or leaves. Her duty is to drape the chair upon which the goddess is seated, as each fairy hands scarf.

Seven fairies, representing the prismatic colors.

The fairies should enter one by one, each dressed in the color she represents, bearing a scarf of the same color thrown over the shoulder, which she hands to the attendant after reciting. She wears a tissue paper cap of unique form. As they finish reciting they step back, forming a semicircle.

The dresses and decorations may be made of tissue paper or cheese-cloth, or the dresses may be white with the caps, scarfs and flowers of color.

Enter, goddess and attendant, each being seated, the goddess in the chair, her attendant on the footstool.

Chorus, School.—"Good morning, Merry Sunshine.

Fairy Red.—I'm the little Fairy Red
Who paints the cherry's hue,
Who tints the beautiful sunset,
And the holly berries too.

Shows bunch of cherries or holly berries.

Fairy Orange.—I am the gorgeous Orange,
Like my namesake, rich in hue,
I paint the sky with a brilliant tint,
And some tulips gay for you.

Shows orange or bunch of tulips.

Fairy Yellow.—I'm a little maiden,
My name is Fairy Yellow,
I paint the dandelions and buttercups,
And the pears so ripe and mellow.

Shows dandelions, buttercups, or pears.

Fairy Green.—I come from the lawn and meadow,
My name is Fairy Green,
I paint the grass and pretty leaves,
Which on the trees are seen.

Shows bunch of leaves.

Fairy Blue.—I'm a very little fairy,
My name is Fairy Blue;
I paint the sky so daintily,
And give forget-me-nots their hue.

Shows forget-me-nots.

Fairy Indigo.—I'm the darkest of the fairies,
My name is Indigo,
I paint the cloud which brings the rain
Upon the earth below.

Shows scarf of indigo.

Fairy Violet.—I'm the little Violet Fairy,
Named for the violet sweet,
Which grows in shady places
And in some quiet retreat.

Shows bunch of violets.

All.—We are the seven little sprites,
Sent by the Father Sun;
We kiss the tiny rain-drops,
And then our work is done.

Goddess (rising).—Welcome, little fairies,
Who make the rainbow bright,
So beautiful and radiant
In all your colors dight.

Chorus, School.—"Little Raindrops."
(Any other rain song will do as well.)

"Better late than never." It is best, however, to be never late about taking Hood's Sarsaparilla to purify your blood. Take it now.

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THE SCHOOL JOURNAL, established in 1870, was the first weekly educational paper published in the United States. During the year it published twelve school board numbers, fully illustrated, of from forty-four to sixty pages each, with cover, a summer number (one hundred twenty-four pages) in June, a private school number in September, a Christmas number in November, and four traveling numbers in May and June. It has subscribers in every state and in nearly all foreign countries.

SUBSCRIPTION RATES.

TWO DOLLARS a year in advance. One dollar for six months. Single copies, six cents. School board numbers, ten cents. Foreign subscriptions, three dollars a year, postage paid.

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Will be furnished on application. The value of THE SCHOOL JOURNAL as an advertising medium is unquestioned. The number and character of the advertisements now in its pages tell the whole story. Circulating as it does among the principals, superintendents, school boards, and leading teachers, there is no way to reach this part of the educational field so easily and cheaply as thru its columns.

Interesting Notes.

Description of the Philippines.

After Puerto Rico and Hawaii have been disposed of by Congress, the most difficult problem of all will come up, that in regard to the Philippine islands. One reason for the difficulty is the great variety of people on the islands.

There is no country in the world where there are so many distinct native tribes nor so many languages, or rather dialects

spoken as in the Philippines. There are at least eighty tribes, and as many dialects. In customs, habits, and peculiarities these tribes differ more widely than the numerous tribes of the North American Indians. Their origin is not veiled in so much mystery, however, as that of our Indians. The racial tendencies of the native Filipinos are easily traceable to the Malay people.

The tribes are scattered through the valleys, the hillsides, and the mountain forests of a thousand islands. Beginning within five degrees of the equator the Philippines stretch northwards for a thousand miles. The archipelago is 600 miles across from east to west. Twelve of the Philippine islands contain nearly all of the total area estimated at 114,125 square miles. Twenty others next in size contain less than 4,000

to the west from the main group, broadside against the China sea.

The climate of the Philippines is trying not because the heat is so much greater than it is here, but because it is constant. Every month you may see the thermometer fall as low as 60 degrees and occasionally rise to 90 degrees in the shade. Few countries in the world show a higher mean temperature (annual), which is 80 degrees, according to the Manila observatory. This is nine degrees higher than the mean annual temperature of Honolulu, for instance. It is the great humidity of the atmosphere that makes the heat of the Philippines almost unendurable to Americans and Europeans.

The seasons of wind and rain vary in the different islands and often in the different localities on the same island, Mindanao



square miles of this area, and the hundreds of others are mere dots of from a few thousand acres each or bare rocks. The twelve islands of greatest size are Luzon with 41,000 square miles; Mindanao, 37,500; Samar, 5,300; Panay, 4,600; Palawan, 4,150; Mindoro, 4,050; Leyte, 3,090; Negros, 2,300; Cebu, 1,650; Masbate, 1,315; Bohol, 925; Cantaduanes, 450.

The following twenty islands have an area averaging about 200 square miles, or 128,000 acres each: Sulu, Basilan, Culion, Busnanga, Tablas, Maringugne, Guimaras, Dinagot, Tawi-tawi, Balabac, Liquinor, Libuyan, Panaon, Cansiguin, Romblon, Polillo, Siargao, Ticao, Biliran, and Burias.

The northernmost, or Luzon, reaches her long arm far to the southeast, Mindanao almost touches the Sulu group, while Palawan alone stands out boldly by herself

and the other southern islands are not affected by the trade winds, and destructive typhoons are unknown to them. The typhoons in Luzon and other islands to the north have destroyed whole villages, have uprooted the trees of forests, destroying everything in their path.

The mountain islands are seamed with flat valleys, having rapid rivers coursing through them. During the rainy season freshets are the order along these rivers, and they overflow their banks, spreading over the valley in great seas.

There are active volcanos in Luzon, Mindanao, and Cansiguin. Evidences in abundance are not lacking in the Philippines of the recent changes wrought by the action of volcanoes and earthquakes.

The discharges of the volcanic piles of the Philippines show many cinder cones.

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Hot springs of mineral water from within these accumulations deepen the interest to the geological student.

The volcanic cone Mayon, at almost the extreme southern end of Luzon, in the provinces of Panay, is the most famous in the Philippines. It is 8,925 feet high and constantly in action. The country at the foot of Mayon is very fertile and thickly populated, and the inhabitants live in dread of the periodical eruptions of destructive activity.

Apo, on the island Mindanao, is the loftiest mountain in the islands with an active crater at its summit, 10,000 feet high.

Special Rate South.

The Southern Railway announces one fare the round trip on dates named below for the following occasions:

Chattanooga, Tenn.—Cumberland Presbyterian Church, May 15-18; good returning May 26.

New Orleans, La.—Travelers' Protective Association, May 19-21; good returning May 29.

Atlanta, Ga.—General Assembly Presbyterian Church, May 15-17; good returning May 29.

Charleston, S. C.—National Educational Association, July 3-6 7-9; good returning September 1.

For full particulars call at Southern Railway Ticket Offices, 271 and 1185 Broadway, Alex. S. Thweatt, Eastern Passenger Agent, 1185 Broadway.

Reduced Rates to Philadelphia.

Via Pennsylvania Railroad, Account Republican National Convention.

On account of the Republican National Convention at Philadelphia, June 19, the Pennsylvania Railroad Company will sell excursion tickets to Philadelphia from all stations on its line at rate of one fare for the round trip (minimum rate, 50 cents). Tickets will be sold and good going June 15 to 19, inclusive, and returning to June 26, inclusive.

To View the Total Eclipse of the Sun. Special Excursion to Norfolk via the Pennsylvania Railroad.

For the accommodation of persons desiring to view the total eclipse of the sun on May 28th, the Pennsylvania Railroad will run a special excursion from Philadelphia to Norfolk and return, leaving Broad Street Station by special train of coaches and sleeping cars at 8.55 P. M., May 27th, arriving Norfolk, via Cape Charles Route, before 6.00 A. M., May 28th. A complete table d'hôte breakfast will be served on the special steamer between Cape Charles and Norfolk, at seventy-five cents. Returning, special train will leave Norfolk at 6.00 P. M., May 28th; arrive Philadelphia the following morning.

Round trip tickets for this occasion will be sold from Philadelphia at rate of \$5.80. Tickets can be procured and sleeping car accommodations reserved on application to ticket agents.

The eclipse will be total at Norfolk, at 8.54 A. M., and the totality will continue one minute and forty-one seconds.

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State Summer Institutes, each including a Department of Pedagogy and a Department of Review, will be held JULY 9-27, 1900, at Chautauqua, N. Y.—PHILIP M. HULL, A.M., of Johnstown, N. Y., Conductor; and at Thousand Island Park, N. Y.—CHARLES A. SHAVER, of Watertown, N. Y., Conductor. A strong faculty has been engaged for each institute, and well chosen courses have been arranged for teachers who desire to avail themselves of the opportunities offered. For further particulars, address the State Department of Public Instruction, Albany, N. Y., or one of the conductors.

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—Texas Medical Journal.

Reduced Rates to North Manchester, Ind., via Pennsylvania Railroad.

For meeting of German Baptist Brethren, at North Manchester, Ind., May 29 to June 8, 1900, the Pennsylvania Railroad Company will place special excursion tickets on sale May 29 to June 3, 1900, from stations west of Baltimore (not inclusive), and Lancaster and Reading (inclusive), and south of and including Sunbury, at rate of one first-class limited fare for the round trip. Tickets will be good returning until July 1, inclusive.

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The tour will leave New York 8 A. M. and Philadelphia 12.20 P. M., Tuesday, May 29, in charge of one of the company's tourist agents, and will cover a period of five days. An experienced chaperon, whose especial charge will be unescorted ladies, will accompany the trip thruout. Round-trip tickets, covering transportation, carriage drives, and hotel accommodations, will be sold at the *extremely low rate* of \$25 from New York, \$24 from Trenton, \$22 from Philadelphia, and proportionate rates from other points.

For itineraries and full information apply to ticket agents; Tourist Agent, 196 Broadway, New York; 4 Court Street, Brooklyn; 789 Broad Street, Newark, N. J.; or address Geo. W. Boyd, Assistant General Passenger Agent, Broad Street Station, Philadelphia.

Reduced Rates to Camden, Ind., via Pennsylvania Railroad.

For meeting of Old Order of German Baptist Brethren at Camden, Ind., June 3 to 5, 1900, the Pennsylvania Railroad Company will sell, from May 31 to June 3, inclusive, excursion tickets to Camden, Ind., from stations on its line west of Baltimore, Md. (not inclusive), west of and including Lancaster and Reading, and from stations south of and including Sunbury, at rate of one first-class limited fare for the round trip. Tickets will be good returning until July 5, inclusive.

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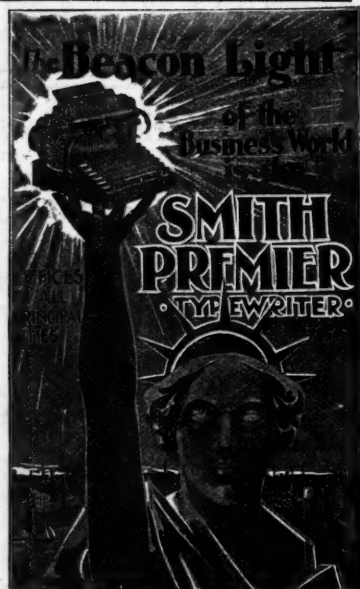
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